AMERICAN BEE JOURNAL

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The Relation of Package to Price and Demand

By Morley Pettit

I WISH to make a few remarks about this article in the January number. When Dr. Steffen states that honey can rightfully be classified as a luxury and not as a necessity, I am willing to let him have his opinion although I know he has never been in my home, or the home of many hundreds of beekeepers where the honey container must be on the table for at least one meal of every day or it is asked for by the beekeeper or by other members of his family.

But when he concludes that unless the honey producer gets away from even ten-pound pails and down to one-pound containers or is "not worthy of the business," I am ready to fight. I know that thousands of other producers feel the same way.

My dear sir, I do not know how many tens of thousands of ten-pound pails of the finest clover honey sold in granulated form have been produced by the Pettit Apiaries and sold to consumers who use it on their tables regularly as a commodity and not as an expensive luxury.

But let us examine the argument on which Dr. Steffen bases his theory that honey can never be anything but a luxury. First, what is a luxury? I presume it is something we enjoy but could do without.

In this free country each person is pretty much his own judge as to what enjoyable things he can do without, with one or two notable exceptions. It would seem almost safe to state that when a person decides he does not wish to do without a thing he enjoys, that thing becomes a necessity to him. It may still be classed as a luxury by most people, but when a sufficient number of people earnestly desire the same thing it passes from the luxury class to the necessity class.

The mind of most of us naturally turns to recent luxuries which have become necessities. It was only a few years ago that we had an election campaign in Ontario which hinged largely on the question of good roads. The Government had planned an expensive good roads system and the opposition attacked them viciously, calling them "speedways for the idle rich."

The Government was overthrown and the new Government planned a greater expenditure for roads than their predecessors, and, of course, they learned that recent luxuries were necessary.

Even potatoes, universally recognized now as a necessity, were at one time unknown. Many of us remember the days of the old horse in outapiary work when automobiles were unknown and then later when they were most decidedly in the luxury class. Yet who would call an automobile a luxury now? Not a doctor of medicine, I am sure. And this brings us to the crux of the whole question. Is it desirable to suppress the production of honey so as to hold it in the luxury class, or to expand it and lower the cost of production so as to bring about the greatest good to the greatest number?

Up to a certain point in automobile manufacture the luxury idea seems to prevail. Then a mechanic who is really a genius conceives the idea of setting the world on wheels with little gasoline engines to make them go around. He not only succeeded, but in doing so he became the wealthiest man in the world.

Not many honey producers will ever become Henry Fords, but we can learn from him that it isn't the selling price of our products that counts; it isn't even the difference in fractions of a cent between what it costs us to produce a pound of honey and what we receive for it when it is sold. It is the balance on the left side of the ledger that we can call profit at the end of the year which shows whether our business is paying adequately for what we are putting into it.

It is easy to talk about the high price of radium and diamonds. I am told that even diamonds are not marketed as produced, but only as the luxury market will absorb those that are offered.

The supply of honey is entirely uncontrollable, being produced in great profusion by flowers both wild and cultivated in all parts of the world. Knowledge of the successful care of honeybees has been widely distributed and as a result of the wide extent of nectar sources and beekeeping we have greatly increased honey production, which, as the doctor says, is "the finest and oldest sweet in all creation." Perhaps he will be glad that he has said one thing with which all beekeepers will agree.

Honey is not rare. So long as honey-producing plants are grown profusely in nature and in agriculture, the only thing that will curtail production is for prices to fall so low that it becomes unprofitable. Just let prices slightly increase and watch production jump. The answer is not the small, expensive container—far from it. What we need to do is to broadcast the idea that for a great many people honey has long since passed from the luxury class to the list of necessities.

There is, of course, a market for the small containers and it is essential that we preserve as far as possible "the intrinsic merit, the delicate finish, the exquisite flavor, the absolute all-around goodness of honey." But it has been demonstrated that it is bad psychology and poor logic to try to make people think such goodness is rare and unattainable to buy it in large quantities.

Let us come back to the outstanding example of a luxury article being forced into the necessity class by mass production. Just compare the

appearance and performance of the luxury automobile of a few years ago, that of the cars which are among the common necessities of life today We could apply all the delectable adjectives used on honey, and some more to the modern automobile, yet it is manufactured in millions and sent out in vast quantities to all parts of the world. It has long since displaced the horse on the street, is putting electric roads out of business all over the country, and it is even giving the steam railways a hard run.

When the man of small income thinks of buying an automobile does the salesman tell him that it is not really necessary for him to have a car, or does he say they are hard to get, and he will try to get one if he insists on it? If he ever did, how long would it take the prospect to go across the street?

On the contrary he is convinced by good arguments that his success in every way depends on his owning an automobile of this particular nature. No luxury talk, yet the car is beautiful and luxurious. When the woman of small income goes to her grocer, she may buy a small amount of rare, expensive foods, but it is very small. The great bulk of her budget is filled with familiar articles. If honey is included, it is because she has been taught to use it freely. How? By advertising.

Very few men have been made wealthy by producing luxuries so long as their commodities remained in the luxury class. Many men have become millionaires producing some simple thing which they were able to bring into general use by advertising.

"Let's quit trying to fool ourselves and others" with that old story about the man who made a mouse-trap, and because it was better the world made a path to his door. Nowadays a man has to be on the highway, and close to a filling station at that, or he is out of luck.

We are truly "marketing nature's finest delicacy—a veritable luxury—one that need not substitute for any other," but many others will jolly well continue to substitute for it so long as we fail to make honey a household word and bring it into general use by modern merchandising methods.

This battle of foodstuffs in which we are now engaged is one in which there can be no disarmament conference. Under existing conditions it is war to the death and victory to the commodity produced in the greatest quantity, of best quality, and merchandised in the most scientific way.

The world has not time to court the coy, retiring maiden, be she ever so charming. She must decide what she wants and go after it, or be satisfied to remain a wallflower.

A French Beekeeper Visiting America

The Dadant establishment has recently had the visit of an enterprising beekeeper, with more than ordinary ambition. Mr. Jean Chaneaux, living in a small village of the Jura, in France, owns large apiaries and has had the ambition to get acquainted with the beekeeping methods of other countries. He attended the International Congress of Beekeepers at Turin in September, 1928, as also the Apis Club meeting in Berlin of 1929. Now he is visiting America, having one of his beekeeping partners take his place in his apiaries for the season. He has visited several large establishments of the East and after leaving us went to Alabama, there to examine the methods of rearing package bees for shipment to the North. Afterwards, he will visit Texas, California, Colorado, and the northern states, stopping a few days in the places of interest to tourists, the Grand Canyon, the Yosemite, the Yellowstone. He will certainly acquire some information on America and American beekeeping before he goes back to his home in the Jura.

Three Tons of Honey in One Haul—Believe It or Not

Our good friend C. D. Cheney, of Lakehurst, New Jersey, sends a clipping from the "New York Sun" of Wednesday, November 13, in which it is reported that two men of Regency, Texas, claim the joint championship for locating bee trees, having obtained more than three tons of honey in fifty trees within ten miles. The clipping goes on to say that locating bee trees is comparatively simple.

We think that this is pretty successful bee hunting, and possibly true. In a region where bee trees are that numerous it ought to be easy to get a fairly decent apiary started without much expense.

New California Cooperative Combine Speeds Up

By R. B. McCain

The old saying, "large bodies move slowly," seems likely to be reversed in the case of California beekeepers and the cooperative pooling agreement. Since the publication of the article in the March number of the American Bee Journal, in regard to the initial meeting of beekeepers at Sacramento to consider the proposition, progress has been so rapid that it is almost impossible to keep pace with the movement.

The committee that was appointed early in February by the President of the California State Beekeepers' Association, Mr. George J. Brown, met in Oakland and conferred with Mr. T. C. Tucker, manager of the California Almond Growers' Exchange and President of Packing and Marketing, Incorporation, in the drafting of the contract and marketing agreement which is now being presented to beekeepers throughout the state for their signature. This committee is made up of the following prominent beekeepers of northern California: Mr. Thomas C. Burleson, Colusa; Mr. Abbott Koehnen, Tracy; Mr. A. M. Hengy, Oroville; Mr. George J. Triphon, Dixon, together with Messrs. George J. Brown and Cary W. Hartman, President and Secretary, respectively, of the State Association of Beekeepers, as ex-officio members of the committee. This committee has now completed its work and the finished document is before the beekeeping fraternity to do with it as it seems best.

A meeting was held at Chaffey College, Upland, on February 22. This is in the southern part of the state, and a large and representative gathering of the beekeepers of southern California is reported to have given the proposition a thorough consideration and discussion. The sentiment of this meeting was the same as has been found wherever the proposition has been presented and explained; that is, it was approved. Mr. D. R. Bailey, of Sacramento, who is also a member of the official board of Packing and Marketing, Inc., is now in the southern part of the state holding conferences with beekeepers.

Mr. T. C. Tucker reports that a large and enthusiastic meeting of beekeepers was held at Chico, February 25. The pooling and market-

ing proposition was presented and thoroughly discussed. It was not only unanimously approved, but a number of contracts were signed. The mails are bringing in signed contracts to the offices of the corporation. Efforts are now being directed toward the gathering of the 1930 crop into the factory and placing it on the market. Who knows but that by next Christmas stores throughout the United States will be displaying prominently, and in attractive containers, the product of the new cooperative under some such trade name as this: "PURE HONEY, CALIFORNIA BLEND"?

This development may not be a reversal of that old saying about large bodies moving slowly, after all. What is happening is more likely the visible results of a long process of invisible preparation. The theory of cooperation is generally accepted as good and right. Few will undertake to deny the statement that if real cooperation is employed, it will prove the best method of procedure in every human enterprise. This is no new discovery, but an ancient truth seeking a new application. The beekeepers of California have only been waiting for the right kind of an opportunity to present itself. Now that the opportunity seems to have arrived, they seize upon it.

DOINGS IN THE NORTHWEST

By N. N. Dodge

German Beekeeper Guest at Seattle

On a world tour investigating conditions in numerous industries in which he is interested as a commercial importer, Mr. Rudolph Peterson, of Hamburg, Germany, was a guest of the Seattle Chamber of Commerce on March 7. He was particularly welcomed because of his position as President of the Hamburg Chamber. Mr. Peterson has visited South America, particularly Brazil, visited several cities in the United States, and passed through Seattle on his way to the Orient. He is one of the largest German importers of honey, and expressed himself as being very much interested in the honey producing industry in the United States. He urged American beekeepers to continue shipping honey to Germany regardless of the lowered returns brought about by the recent tariff increase, because if the German importers and the German public became accustomed to honey from other countries it might prove difficult to again secure their interest in United States honey in the future. On March 8, German buyers were offering $9.75 per 50 kilos (112 pounds) for American honey. This nets the American producer about 6.7 cents per pound.

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Winter Loss Above Normal

Reports from eastern Washington and Oregon show a somewhat heavier than normal winter loss because of the severe winter. Mr. J. O. Kane, of Sunnyside, Washington, stated that his bees came through the winter in good shape and that young bees were emerging February 20. Scarcity of early spring bloom in central and eastern Washington makes necessary an abundance of stores left in the hives for spring brood rearing. Dandelion and apple bloom appear late in April and during May. In the intermountain region many bees were smothered because of hive entrances being clogged with ice. The severe cold weather weakened colonies and caused a heavy consumption of stores. The many deep snows of the winter give promise of abundant supplies of irrigation water, which in turn should assure luxuriant fields of alfalfa and sweet clover, so that bee pasture should be ample.

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Honey Prominent in New Security Market

Seattle is noted for its public markets, of which there are many in the city. Honey is one of the chief commodities handled in the market stalls, keen competition resulting in slashed prices. On February 14 a new and modern public market was opened in Seattle, to be known as the Security Public Market. The opening day found honey very prominent on the shelves and counters of the butter-and-egg stalls, as well as those handling a greater variety of food products.

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Kehn Installs New Oven Due to Honey Bread Demands

Mr. Max Kehn, proprietor of the Rainier Baking Company of Seattle, makers of Carnation Honey-Made Bread, is installing a new oven in his bakery. He states that the additional equipment is necessary to keep up with the ever increasing demand for bread made with honey.

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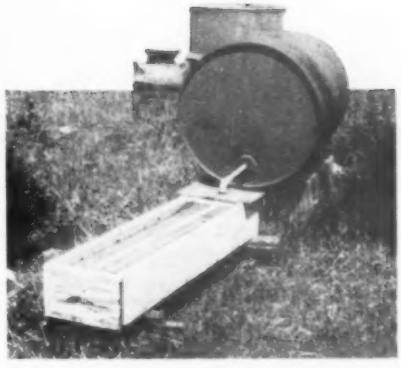
Sister of J. M. Stark Passes On

Early in February, Mr. J. M. Stark, of Middleton, Idaho, was called to Seattle by the death of his sister. Mr. Stark is one of the largest producers of honey in Idaho. He is a member of the Mountain States Honey Producers' Association, being President of that organization during 1928. Mr. Stark's many friends and members of the Association who know him through the organization sympathize with him in the loss of this member of his family.



A Good Watering Outfit

I am sending you a picture of the watering outfit I used last year. It consists of a 60-gallon steel barrel, a trough, and a home-made float. One end of the trough is partitioned off for the float and the other part has laths in it which float on the water. The float is made by stretching a piece of inner tube over a block of wood and having a cavity cut out about three inches square underneath the rubber. Small strips of tin are securely nailed on the top of the rubber to make it water tight.

The float should be well painted so it will not absorb water. I had three of these outfits in use the past year and liked them fine. They need no attention for two or three weeks.

Last year was a good one for me. From 188 colonies, fall count, I received 38,000 pounds of honey, or an average of over 200 pounds per colony. One hundred colonies with three-pound packages and the old bees were weak in the spring. I work my bees every week and permit very little swarming. I have one helper. We plan on having 225 colonies the coming year.

M. W. Thompson, S. Dak.

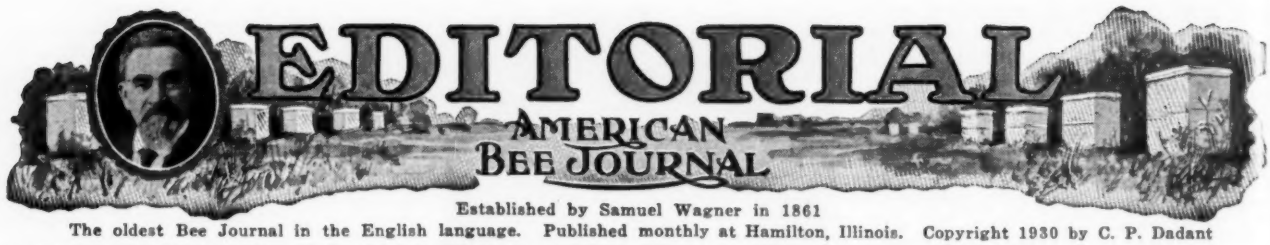
MEETINGS AND EVENTS

Southern States Conference at Baton Rouge

(The following report received from Jes Dalton, a longer report by H. C. Dadant on page 172.)

This meeting was opened with not only the largest assembly of beekeepers ever seen in the South, but among them some of the most distinguished. Dr. E. F. Phillips, of Ithaca, gave an excellent talk on "The Lore of the Honeybee" and pictured the romantic interest to beekeeping, both novice and professional. He also stressed the need of bees in apple orchards in New York State. Some of the important points were the need of the package being shipped on exactly the day ordered, another not to promise the orchardist that bees would solve all of his

(Continued on page 191)



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Corn Sugar Again

The proposed corn sugar legislation has taken a very peculiar turn. The general bills against which the beekeepers have been contending are not under consideration at the present time. Instead an attempt has been made to insert a provision in the preservers' bill which would permit the use of corn sugar in preserves, jams and jellies without declaration on the label.

The preservers' bill has been introduced to meet a serious situation confronting the fruit growers. It is said that manufacturers are flooding the market with substandard preserves against which the fruit growers cannot compete. The bill sets up a standard quality which must be met in such goods, and accordingly the fruit growers are very anxious to see it pass, and it has also been endorsed by the United States Department of Agriculture as originally offered.

The opposition is not to the preservers' bill, but to the provision which has been inserted permitting the use of corn sugar without declaration on the label. Honey is little affected by this particular bill, although the bill does define "Honey Preserve," which only concerns preserves containing honey.

Naturally the bill is opposed by preservers interested in selling an inferior product, and the corn sugar provision is opposed by all who believe that the label should declare the contents of any and all food products. The beekeepers are in sympathy with the efforts of the fruit growers to standardize their product.

Our Field Editor spent several days in Washington and was present at the hearing. He was assured by several members of Congress that any bill which might pass would be so worded as to avoid any possible danger to the honey-producing industry. The suggestion was made by Mr. Campbell, the representative of the U. S. Department of Agriculture, that all sugars be declared on the label, thus putting all exactly on the same basis. He explained that the Department has no prejudice against corn sugar, but on the contrary wished to find means of popularizing it for uses to which it is well adapted. He pointed out that the label is the safeguard of the buyer of food products and that to permit fraud by allowing anything to be used without declaration on the label is unwise.

The preservers' bill was first introduced by Congressman Reed of New York as H. R. 8571. When corn sugar advocates proposed to change the bill to open the door for corn sugar, a new bill was drafted bearing the name of Congressman Haugen, chairman of the committee. It is very similar to the Reed bill excepting on the one point. This new bill is known as H. R. 9760.

The American Bee Journal feels that the beekeepers may well favor the original Reed bill, since there is nothing in it to offer danger to honey, while it does provide protection to the fruit men against inferior preserves. With the objectionable feature of the Haugen bill removed, that might also prove acceptable. Apparently the corn sugar forces intended to make it impossible to pass any measure offering relief to the fruit growers unless the corn sugar provision was permitted to go through also.

The adjourned hearing occurs after this issue goes to press, hence we are unable to report the final action of the Agricultural Committee.

Honey in the News

A few days ago, in the editorial offices of one of the world's great newspapers, a visitor was asked as to what is happening to the honey industry. The editor of a publication with millions of readers must keep informed as to the trend of the times. Any unusual amount of discussion in any field attracts notice, and the New York editor was impressed with the number of articles about honey which have lately appeared in newspapers and magazines. Mention was made of the numerous recipes calling for honey which are now to be found in all kinds of periodicals. So many such things have appeared that the editor was curious as to the source of them.

This unusual interest is fortunate just now, when Germany has adopted a high tariff against American honey. Perhaps a home demand will result which will provide an outlet for the surplus, which is causing so much concern.

Efficiency Brings Profit

Under present conditions, when slow markets and low prices prevail, the chance of profit lies in an increase of production or a reduction of cost. The man who produces an average yield of one hundred pounds of honey per colony may show a profit, when his neighbor who gets only seventy-five pounds per colony fails to do so. The man who can reduce his expenses without decreasing production, or who can increase his output with the same labor and equipment, can increase his net profit to just that extent.

Better stock, young queens, better bee pasture, more efficient methods—all these tend to increase profits.

Humbugs in Bee Culture

The European magazines on beekeeping are publishing an item which is said to come from America. It is the statement that they have found a sweet product harvested by the bees from pine resin, which they have called "tukanose." The funny part of the story is that the beekeepers of America have valued this product at $20,000 per pound. Well, this is a good story to tell on America, but we believe that this has not yet appeared in print on this side of the Atlantic. Our European friends enjoy making us look big in money values.

Colonies Need Plenty of Food

Let us not forget that this is the season when bees expend the largest quantity of food for brood rearing. After an early spring, there is more opportunity for the bees to find themselves short of honey, even if they had plenty. As we want all the bees we can get, in spring, we should keep an eye on our colonies and, if they are short, feed them. Bees must have all the food necessary to produce large quantities of brood. Eggs laid at this date will produce workers which will begin to work in the field in about thirty-five days. Do not forget it. Strong colonies harvest large crops.

Life in the Open

We who live in the country can hardly imagine the conditions of life in the large cities of the present day. In congested districts the rental of a comfortable apartment equals the entire monthly salary of a small-town clerk or a farmhand. While the apartment contains such conveniences as heat, light and bath, there is little else. There is no lawn, no garden, not a tree in sight. Tenants are crowded together like transients in a big hotel.

One who is accustomed to plenty of room, green grass, flowers, trees and sunshine would find it hard to adapt himself to living in such prison-like surroundings.

On a recent visit to a zoo in one of our largest cities, the writer was surprised to find that a pen of barnyard fowls was one of the most frequented exhibits. Hundreds of children find the fowls as strange as the monkeys from Africa, and far more so than the parrots from the tropics.

We country folks may have smaller incomes than our city cousins, but we have many things which money will not buy in the cities, and few of us would change places if we knew all the advantages which we possess. Beekeeping may not offer a way to great financial rewards, but measured in real values it offers an opportunity for full and happy living such as few occupations can equal.

Bees With Horticulture

There has been much discussion as to the proper place of the beekeeping work in our educational institutions. Because the bee is an insect, the work is usually classed as an entomological project, yet it seems a bit out of place. Entomological work is based on a defense against injurious pests. The bee alone offers productive enterprise and as such should be related to other constructive lines. It is more nearly allied to animal husbandry than to entomology.

Michigan has recently placed her beekeeping work in the Department of Horticulture, where it seems to find a very congenial environment. The work carried on in that state, to demonstrate the importance of honeybees in the pollination of fruit, has attracted wide attention. Horticulture and beekeeping are so closely affiliated that the work of both would benefit by being developed together.

Prices and Substitution

So many new articles are appearing in the markets of late that every manufacturer is concerned for fear something will develop to replace his particular product. More and more are ways and means being sought to reduce cost of production in order to hold markets for established lines of goods.

We have seen sugar replace honey as a staple article because it could be sold at a much lower price. Recently the dairymen have seen the market for butter undermined by substitutes made from vegetable oils. Rayon is replacing silk in similar manner. One machine replaces another because it does the work as well and can be sold for less.

Since honey has lost its place as the universal sweetening agent, it must find its outlet because of its quality. Products which command extra price must be put up in attractive packages and have some appeal not satisfied with a cheaper substitute. The hope of our industry now seems to lie in developing a trade which demands extra quality, and this can only be accomplished by great care that poor honey is kept out of the fancy market and sold for baking or manufacturing purposes. A few pounds of poor honey can ruin the market for many times the amount of that which is of really good quality.

Importance of Stores

April, in the northern states, is one of the most critical times of the year with the bees. With a week of cold and rainy weather, we can expect the death of thousands of strong colonies from lack of stores. When brood rearing is heavy, stores disappear at a surprising rate. Colonies which do not have a good reserve of honey at this season are in a bad way when the weather is unfavorable for field work. The best investment that the beekeeper can make just now is to make sure that every colony of bees has plenty of feed to carry them through, no matter what the weather may be.

Dandelions

The public regards the dandelion as a nuisance, and much effort is expended at this season to grub them out of the lawns. Whatever they appear to the rest of the world, they are the source of real gold to the beekeeper. Coming at a time when nectar and pollen are most valuable, the dandelion is one of the best sources of spring stimulation to the bees. But little surplus honey is gathered from dandelion, but it furnishes food for millions of young bees growing for the harvest from clover to come in June.

A Trip to the Southern States Beekeepers' Conference

By H. C. Dadant

TO see the sunny South in early spring, its historical places, its problems following the Civil War, the early vegetable gardens, the vast wastes of its swamps, the conifers and magnolias, the palms and oaks with their weird drooping festoons of Spanish moss, and the blossoms of the cities and plantations, offers recreation every beekeeper may enjoy.

A sight-seeing bus around the city of New Orleans is a very satisfactory way of finding the interesting places in a few hours. We found the conductor well versed in the history of the city and his talk both authentic and very enjoyable.

New Orleans is not altogether in the U. S. A. Part of it is just across the line. The I's have it and you may cross the line into a parish which is a first cousin to Monte Carlo. There are no bars, yet they let down the bars just far enough for you to look over. The sightseeing bus will take you out for the evening, guarantee your safe return, and that you will not regret it, ladies included.

Some of the old Creole aristocracy and French hospitality is still there, but the language is fast disappearing. They told me there is not so much of the bad here as one may find in the more hidden quarters of other cities.

One should not miss lounging a while under the tremendous spread of giant live oaks drooping with the gray Spanish moss, to feel the enticing breeze of a heavy salt air on a day when the world up North feels northerly.

Take your volume of "Evangeline" with you to read again and dream of the days far back during her undying love. For a thrill or chill you may see the haunted house of Madame Lalaurie's tortures and the courtyard of dungeons once occupied by the daring lawless Lafitte sea raiders; or go to the St. Louis Cathedral and also see the unusual collection of antiques adjoining. We saw an antique factory and were cautioned to a shop where imitations are tabooed.

The Southern States Beekeepers' Conference of 1931 is to be held in Montgomery, Alabama, probably the most centrally located city of the South. Montgomery and its bee men will welcome you. Many of our oldest and best bee shippers are located in that state and some of them on the ground or nearby. It is the home of Mr. M. C. Berry, who finds it possible to give his family city advantages from the proceeds of one of the largest and best conducted chains of yards for bees and queens in the South. It is a land of promise much as any other good region of our country. One must manage and work well to succeed.

In fact the queen and package business has its big problems and the more ambitious southern shipper is in some cases already planning on how he may move North to the clover in summer. Seven months North and five months South is the program. But with continued indiscriminate lowering of prices on bees, the northern program may be extended to twelve months. Since only too often new opportunities in many industries are overdone, with eventual failure to those who are responsible for demoralizing the market, it is not out of place here to suggest reasonable cooperation among the shippers. The North appreciates good bees, service and reasonably low prices, which should not be sacrificed by a price war.

The Achord yard, the oldest large establishment in the South, now operated by H. C. Short since Mr. Achord has retired, is near Montgomery. For convenience in weighing packages as they are filled with bees, he has devised an electric contact which rings a bell when the scales are tipped to the weight desired, a convenience that is apparent when time and convenience mean much.

There will no doubt be auto trips made to other leaders nearby: J. M. Cutts & Sons, Jasper Knight, and Hayneville Apiaries.

On your way to the Gulf and Mardi Gras you can find a queen breeder every hour if you wish—Uriah Apiaries, McVay, Thagard, Smith, Calvert, Bolling, Crenshaw, Forehand, and others, all advertisers in the Journal.

If you swing over to Mobile, see Citronelle, the bee, quail and fishing country. If toward Mississippi or Georgia, don't miss Running, Stover, Pettit, and others. I can't go with you to Florida, Texas, Arkansas, the Carolinas, Oklahoma, Kentucky, or Tennessee, but there are some big bee men and shippers in every state. And they are hospitable, "yes, sah, they sho' ah."

The problems of the southern shippers and northern buyers are being rapidly solved. It would be profitable to get acquainted and understand each other by going North and South. A few of the southern shippers have already been attending our northern conventions in winter and report a profitable, pleasant time.

We predict a record convention for 1931 at Montgomery, judging from the success of the third Southern Conference just closed. The interest and cooperation of the Federal Field Station at Baton Rouge in promoting solutions of the shipping problems of the South will result in the adoption of a standard package as recommended by Dr. Whitcomb. The package will be light weight, strength considered, properly fed, uniform size for good storing and ventilation in express cars. The express companies promise a reduction in charges from two times to one and one-half times first class. This is important.

The Conference was well attended by men high in the apicultural field. The department at Washington was represented by W. J. Nolan. Dr. H. E. Barnard told us much of the White House conference on child welfare. Children, if given an opportunity at an early age, six months up, will balance their own rations by voluntarily selecting from a variety of foods placed before them what may serve their individual bodily needs best. For instance, one child ate heartily of sea foods when the mother was suffering from goiter. Honey or potatoes may be its choice if sugars and starches are needed by the individual for its well-being.

Among the educators was Dr. Phillips, of Cornell, who pointed out the increasing demand for package bees by the northern orchards needing pollination. Many orchardists are not beekeepers and, being afraid of bees, desire a package in such shape as can be placed in the orchard and sold or destroyed by fire after the pollination period of about ten days. Orchardists have found that a package, which will pollinate from one-half to one acre, is worth from $10 up to them and will readily pay $5 to $10 for a five-pound package provided they can open the package and run, not needing so much as a veil or smoker. An increasing number, however, will likely learn beekeeping eventually.

Following the close of the convention, M. C. Berry, W. A. Ruffin and I accepted the generous invitation of Morley Pettit for an auto trip east toward his winter location in Valdosta, Georgia. The highways along the Gulf are enjoyable, quite straight and generally good gravel or concrete. We stepped on it at fifty, since traffic was light. The resorts along the Gulf seemed quiet, as many are no doubt still suffering from the over-expansion two years ago. It is a good time to find a winter home at reasonable figures.

One can make the drive from Louisiana to Georgia in two days nicely. The drive along the Gulf is ideal and the amphibian song at night through

the swamps (if toads and frogs can sing) fitted in delightfully with the occasion. Honey topics and parlor stories flow rapidly on such an occasion. Pettit and Berry gave us a word picture of their operations, too. Their locations north and south are a thousand miles apart. It means a pleasant change of climate, with but little vacation, and is a heavy program even for those most successful in the industry. Morley Pettit knows and practices the "Economics of Beekeeping" he told us about in the convention.

We called on other bee shippers and saw everywhere busy men seated by stacks and stacks of shipping cages and yet nailing more. The packages are prepared in advance, ready when the April break of spring comes in the North.

Ti-ti, a tall white flowering shrub of the marshland, was blooming at Citronelle, near Mobile, and we found the bees of Mr. Merrill nearing swarming strength. It was March 1; the pear blossoms had dropped two weeks before and the little pears were set. Colonies in this region may be divided in February or March and the production of young bees for the package business brought to a maximum in April and May.

The biggest problem the southern shipper has is to be ready with queens and package bees in April and then get the shipments off in spite of changeable cool weather and torrential rains, for Mr. Northern Beekeeper must have prompt service and good, well-fed, young bees and queens. Only a few years ago comparatively few queens were reared in April, as there was little demand for them. Since the package business has developed, it has been found possible and profitable to produce thousands of queens in March and April.

Returning homeward through Montgomery, I found J. J. Wilder and the new President of the Southern States Conference busy conferring with J. M. Cutts on the arrangements for the 1931 convention. The seven Vice-Presidents elected were: W. E. Joor, Texas; Jere Frazer, Arkansas; Jes Dalton, Louisiana; N. E. Jensen, Mississippi; J. M. Cutts, Alabama; D. W. Howell, Georgia; J. W. Barney, Florida. E. G. LeStourgeon, of Texas, is Secretary.

Honey Sweet Dill Pickles

Six medium dill pickles, sliced crosswise; one cup honey, one cup vinegar, one small can pimentoes (10c size) cut fine.

Bring the honey and vinegar to a boil and pour over the pickles and pimentoes. Let stand two or more days before using.

Mrs. N. I. Lyle.

Professor Karl Von Frisch

As is well known, Dr. Johann Dzierzon was the first one to discover parthenogenesis of the honeybee. His theory that the drones develop from unfertilized eggs, whereas queens and workers come from fertilized eggs, met with opposition from beekeepers and doubt even from zoologists.

The celebrated beekeeper, August Freiherr von Berlepsch, was successful in inducing two of the best known natural scientists in those days, Dr. Leukart of the University of Munich and Dr. von Siebold of the University of Giessen, to make scientific investigation of Dzierzon's discovery. Professor Siebold was successful in proving the presence of a sperm in eggs taken from worker-cells, while he did not find any in eggs from drone-cells. The general opinion that no individual in a bee colony could be produced without fertilization became obsolete. Consequently cases of parthenogenesis were discovered among many hundred species of insects. Dzierzon's observation also served a second purpose: It directed the attention of natural scientists to the honeybee. Its anatomy, as well as natural history, became the subject of thorough research. But after Leukart and Siebold, scientific trend was diverted from the honeybee for a while, until the beginning of the century, when a change for the better made bee research the working field of a series of natural scientists.

It is Professor Dr. Zander to whom we ought to be thankful for an accurate knowledge of the anatomy of the bee, and to Dr. Frisch, who in the field of physiology of the bee, did an enormous amount of work and who uncovered many unknown facts.

Professor Frisch is an Austrian, born in 1886 in Vienna. He studied at the University of Vienna, first medicine and later zoology. He completed his studies at the University of Munich in Germany, where he received his doctor degree in 1910.

From 1912 to 1922 he was instructor at this university and research assistant at its zoological institute. In 1912 he responded to a call of the University of Rostock (Germany), where he remained for two years as professor and director of the zoological institute. During 1923-25 he occupied the same position at the University of Breslau (Germany). In 1925 he went back to Munich as professor of the university and head of the zoological institute, successor to Professor Hertwig.

He is chiefly engaged in studying the senses of the honeybee. For years he carried on research and with numerous experiments he has proved the color sense of the bee. The presence of the olfactory sense and gustatory sense has also been established and their importance in visiting flowers has been investigated. Extremely interesting are his observations about the "language" of the bees. He found the means by which bees transmit to their colony the news of finding nectar and pollen sources. Dr. Frisch produced a moving picture that demonstrates his method of proving the color and olfactory senses of the honeybee. Other reels show the dances performed by bees on the combs to inform the colony of the discovery of new sources of bee foods. Frisch's film caused considerable sensation among beekeepers as well as among zoologists.

His physiological research on the bee also found approval of the American entomologists, and his research results in book form are found in many libraries of our country. In 1927 he summarized his papers in a less technical form and issued them in a small book, "Aus dem Leben der Biene" (From the Life of the Bee), published by Springer in Berlin. It is a treasure chest for beekeepers as well as for friends of the honeybee. The second revised edition appeared last year. At the present time Dr. Karl von Frisch is visiting the United States for the first time. From April 10 to April 13 Dr. Frisch is scheduled as lecturer at the University of Minnesota.

Erwin C. Alfonsus,
Assistant in Apiculture, University Farm, St. Paul, Minnesota.

The Patron Saint of Beekeeping

In Belgium the beekeepers of Huy met in a banquet to celebrate the anniversary of the patron saint of beekeepers, Saint Ambroise.—Rucker Belge.

From Winter to Spring on the Cotswolds

By A. H. Bowen

OUR bees—the companions of a long and busy season — are usually ready for the winter about mid-October.

By that date, wintering preparations have been completed. After a good season this work in outapiaries is lightened by finding the colonies which have produced comb honey rich in combs of sealed sainfoin honey. The average amount found in ten-comb colonies is thirty pounds. A seven-pound pail of syrup puts them in fine shape. Those which produce extracted honey are invariably lighter. They have more pollen, but less honey, for wintering—about twenty pounds being the rule. This shortage is offset by an extra quota of thick syrup. All are considered to have sound-looking, fertile queens, and the majority continue to lay into October at any rate, until feeding stops.

Two balls of napthaline split in half are dropped into each brood chamber to discourage the moth in early spring, the floor board being previously scraped clean of summer debris and the quilts snugly adjusted above the winter passageway. A square of unbleached calico or, better still, stout canvas, three thicknesses of carpet under felt, topped by an opened newspaper to shed moisture, are found to be an excellent combination of packing. So also is a wooden cover with bee space underneath and paper above, all snugly enclosed by the deep telescopic lift.

In our damp winter climate, condensation under the metal-covered roof has proved a nuisance, but it

Above: A Cotswold outapiary on the edge of the wood in the midst of sainfoin and white clover, which give good surplus of light honey. They winter well here.

Below: A clearing in the spinney gives ideal protection during winter and spring.

may be eliminated to our satisfaction by ensuring that the roof is not less than five or six inches above the coverings and provided also with ample ventilation. Bone dry quilts are an asset in wintering.

As soon as frosty weather approaches, small field mice make repeated attempts to squeeze through the hive entrance. Once inside, there is little chance of the colony being alive by spring time. This calls for a metal guard giving the right amount of ventilation and safe protection from both mice and slugs.

The Cotswold heights are distinctly windy. Sites for apiaries in plantations where the hives are fringed with undergrowth are essential. Where not so located the bees neither winter strongly nor do they make quick recovery upon the arrival of spring. Nothing appears to cause heavier loss in flying bees than late frosts and rough winds. Certainly a dry, sheltered situation with south aspect goes a long way to solving some troublesome wintering problems.

The most likely cause of damage in winter is by straying live stock invading the apiary through some "shard" in the hedge, or gap in the wall. About once a month, therefore each apiary is visited in turn to make sure that all is in order; to see that a tell-tale litter of cappings before the openings is not in evidence, and if so to investigate.

Stocks in straw skeps are particularly liable to be invaded by mice.

With us the winter is pretty equally divided by dry and keen weather or weather rainy and damp with accompanying mist or fog. Snow is exceptional and a whole day of bright winter sunshine comes only occasionally. Dampness is therefore our main drawback. Now and again in December or February perhaps we get a perfectly still day, the air as soft and warm as early October, with a light haze in which the gnats dance along the edge of the woods. Only the absence of sun prevents the bees from flying also.

The occasion of a bright day at the end of February makes a suitable opportunity for the first cursory examination of the new bee season. The packing over each colony is removed or rolled back so that part of the combs are visible.

If stores in plenty are seen with a goodly spread of bees between the frames, the quilts are replaced. Colonies which are running low in food are given a good slab of soft candy over the feed hole. There are always a few more improvident than the majority, or some which sulked over their autumn allowance of syrup, and to these a supply of candy is ofttimes the only means of tiding them over; syrup can be safely given.

Losses in winter were at one time excessive as the result of acarine disease. Now that bees are wintering almost normally again, the usual loss through "other causes" stands about 10 per cent.

There is much truth in the old saw appertaining to February 2:

"When Candlemas day be clear and bright,
Winter will have another flight;
If Candlemas day be wet and drear,
Winter has gone for another year."

By March there will be a gentle warmth felt between the hive quilts, indicating that breeding is nicely in progress, and if no setback occurs every stock alive then and flying normally, for early pollen from the sallows, can be counted as having wintered happily and in hopeful shape for the honey harvest to come.

England.

Above: Bees among the fruit trees bring a good crop of fruit and the nectar and pollen from the blossoms is a rare stimulus to brood rearing.

Below: An English village bee garden! Father and son take turns minding the bees during swarming season.

Further Notes on Spray Poisoning

By V. G. Milum, University of Illinois

IN the April, 1928, issue of the American Bee Journal, the writer gave some facts from observations on suspected cases of spray poisoning of the spring of 1927. Several cases of sick and dead bees in front of the hives were discussed and when one hundred bee samples of two different suspected cases of spray poisoning were examined only enough arsenic was found in each to kill two bees if .0004 to .0005 milligram of As $2^0 3$ is considered as the toxic dose for individual bees. As a result of these findings, it was suggested that arsenical sprays could not be blamed for the serious losses unless further investigations should show that smaller amounts of arsenic than that previously reported by investigators are actually fatal to bees.

One work cited was that of McIndoo, published in 1926 in U. S. D. A. Bulletin 1364, "Effects on Honeybees of Spraying Fruit Trees with Arsenicals." The following is the final paragraph of his summary:

"Some of the samples of dead bees collected when the trees were sprayed in full bloom contained on an average as much as 0.0004 milligram of arsenic (As) per bee. Of course, some of the individual bees contained less and some more than this quantity, yet it was not definitely known whether that quantity had actually killed them. A series of laboratory experiments in which definite quantities of several arsenicals were fed to bees decided this question in the affirmative, established the minimum fatal dosage of arsenic (As) per bee to be about 0.0004 or 0.0005 milligram, and showed that the symptoms of arsenic poisoning of bees in confinement were like those of the bees poisoned in the orchards."

Expressing this lethal dosage of 0.0004 milligrams of arsenic (As) as arsenic trioxide (As $2^0 3$), for ease of comparison with other reports, McIndoo's results show 0.000528 milligrams of As $2^0 3$ as the minimum fatal dosage of arsenic trioxide for an individual bee.

Another reference cited in our previous article was that of W. A. Price, reported in Purdue University Agricultural Experiment Station Bulletin 247, published in 1920, entitled "Bees and Their Relation to Arsenical Sprays at Blossoming Time." The following of his summary is of particular reference to our question:

"1. The Gutzeit method of determination of arsenic appears to be sensitive enough for most doses that kill bees; however, it is believed that some very small fatal doses may escape detection.

"2. A very small amount of arsenic (less than .0000005 grams, as $2^0 3$) is a fatal dose for a bee.

"3. The time required to kill the bee with arsenic depends upon the size of the dose. Some expire within one and one-half hours from the time of administration of the poison; others linger on for a period of five or six hours. Most of those observed to die from a dose gathered in the field did so within three hours."

The writer has not had access to the original publications, discussed by Miss Betts, in the January, 1930, issue of the American Bee Journal, but she reports upon the findings of Prof. Dr. A. Borchert, of Berlin, as follows:

"On the average, the lethal dose per bee is 0.0012 mgm. of arsenic acid (As $2^0 5$), a result agreeing with that of previous work by Hilgendorf and Borchert. . . . Further experiments with a pure arsenical salt showed that the real lethal dose was about 0.003 mgm. of arsenic acid."

If the above amounts of arsenic acid (As $2^0 5$) as found by Borchert are converted or stated as equivalent of arsenic trioxide (As $2^0 3$), they would be 0.00103 and 0.0026 milligrams respectively. Thus these amounts are approximately two and five times greater, respectively, than the amounts given by McIndoo and Price.

Let us now discuss our new observation made during the spring of 1929. On April 17, Hyde Brothers, of New Canton, Illinois, first noticed sick and crawling bees in one of their apiaries. As spray poisoning was suspected, the writer was notified and made arrangements to visit the afflicted yard. Investigation brought out the following facts: Good flight weather had prevailed from April 14 to April 19, during which time bees had apparently worked on a sprayed orchard at an estimated 1½-miles distance. The orchardist was late in the application of the "pink" spray, finishing the job after the blossoms had opened. His attitude toward the beekeeper is expressed by his own words, "Build a fence around your bees."

On arriving at the apiary at 10 a. m. April 21, many bees apparently unable to fly were found crawling and clustered in the grass. Many of these sick bees were found to have their bodies distended with a golden yellow viscuous mass of feces. When the distended abdomens were pressed the body wall would break near the region of the scent gland between the sixth and seventh abdominal segments rather than the feces being pushed out through the regular channel of discharge. The bees were so numerous that one could hardly put his foot down without stepping on several bees, while small pits and depressions in the ground were almost completely covered.

The writer was prepared to collect samples of bees, but delayed this procedure at the insistance of the beekeepers, who wanted to show the effect upon the brood. An examination of several colonies failed to find any dead brood. This may be partly explained by the fact that there was no unsealed honey in the hives, indicating that had poisoned nectar been gathered it had been consumed by the bees, or possibly the dead larvæ had been removed and no further poison had been collected.

By 11 a. m., or within an hour after our arrival, such large numbers of these sick and crawling bees had disappeared that it was with considerable search that a collection of 346 bees was procured. This disappearance indicates that something had stimulated the bees to leave the hive before the outside temperature was sufficient for their flight, since they later flew away. (Is this the "disappearing disease" often mentioned by beekeepers and referred to in bee journals?)

Before submitting the collected sample of sick bees for arsenical determination, it was discovered that the sick bees collected were of two types: i. e., those with distended abdomens and those that were apparently of normal size. Accordingly, the sample was divided into five lots. Lots A and B, each consisting of 100 selected bees with distended abdomens. Lot D was made up of 30 bees with distended abdomens. Lot C and Lot E consisted of 80 and 30 bees, respectively, with abdomens not distended. Lots A, B, and C were submitted to the State Analyist, Dr. J. M. Lindgren, for arsenical determination, with the results as shown later in this paper.

Lots D and E were submitted to the Bee Culture Laboratory of the U. S. Bureau of Entomology, and the writer takes the liberty of quoting from the report of Mr. James I Hambleton, as follows:

"Samples of adult bees, Nos. 15222-(D) and 15223-(E) have been received. The bees have been examined, but all of the known disturbances of adult bees caused by microorganisms were eliminated as the cause of the trouble. The swollen condition of the abdomens of the bees in sample D was due to congestion of the alimentary tract with pollen and other matter. Sample E

consisted principally of young bees with digestive tracts that were practically empty."

These lots were not examined for presence of arsenic, but the description of sample D seems to apply to bees where arsenic is present in the alimentary tract.

At 5 p. m. May 3, a two-frame nucleus of bees was made up and then given an inverted feeder with sugar syrup containing the approximate proportion of arsenic as found in the ordinary arsenical spray mixture. The solution consisted of 2½ pounds sugar, 2 pounds water, and 7½ grams of lead arsenate (Pb H As 04). Forty-eight hours later sample F of 100 bees was collected from motionless and crawling bees in front of or inside of the hive. These bees were all distended with golden yellow feces, although there was considerable spotting of the combs and hive by the bees. (The picture accompanying this article indicates the severity of this condition. It is of two frames with foundation, one on either side of the two frames of brood of the nucleus.)

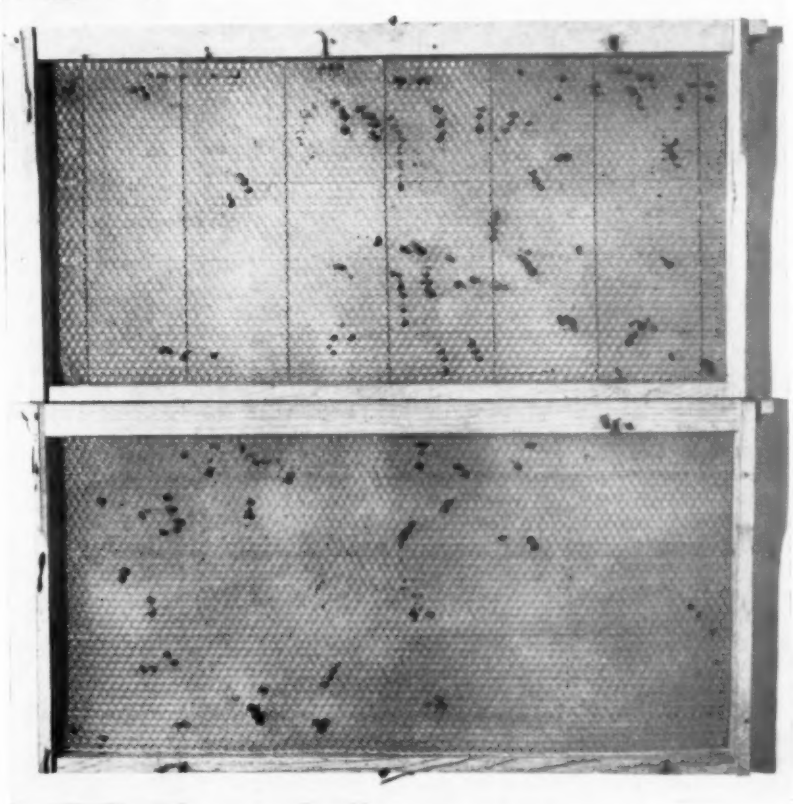
Within twenty-five minutes after this sample was collected, all of the bees were revived and in motion, and twenty-two hours later approximately 50 per cent of the samples were still living in spite of their being under abnormal conditions where normal bees would have soon suffocated from their activity.

Another interesting point is that when sample F was collected, forty-eight hours after the start of feeding, there were no dead drones and they as well as the queen were still active on the combs. At seventy-two hours, thirty-six drones were found alive and only two dead, no count having been made of the original number. The queen was found motionless on the bottom board, but revived when warmed up, later dying. Another 100 bee sample was collected and practically all revived when grouped together in the sample jar. An increasing outside temperature at this time caused many bees around the hive to revive, some of these taking wing and disappearing from sight.

A check sample, H, consisting of 100 bees collected from an apparently normal colony on May 7, was submitted to the analyst, his report on the group of samples being as follows:

Organic matter destroyed with H2 So4 and H N O3 acid and diluted to 100cc. Ten cc. used for comparison with standards made with known amounts of As 2⁰3.

Lot	No.	Number of Bees	Mgms. As2⁰3
A	100	(distended abdomens)	0.01
B	100	(distended abdomens)	0.01
C	80	(normal abdomens)	none
F	100	(poisoned bees)	0.07
H	100	(normal colony)	none



Spotting of foundation placed beside combs of brood in nucleus suffering from spray poison

In our previous article in this Journal we indicated that sufficient arsenic was found in a 100 bee sample to actually kill two bees, if we accept the figure of 0.0004 milligrams as the minimum fatal dosage. On the same basis, sample F with 0.0700 milligrams certainly contained sufficient arsenic to kill all of the 100 bees, although a part of this arsenic may have been carried externally due to spotting inside the hive. On the other hand, samples A and B with 0.0100 milligrams would have only sufficient arsenic to kill 25 bees in each 100 bee samples. But since all of these bees in each sample had distended abdomens, and actions were similar to those in the definitely poisoned sample H, they must have been affected by arsenical poisoning. This would seem to indicate that a lower figure than 0.0004 to 0.0005 milligrams of As2⁰3 will have to be accepted when further experimental evidence is produced, as was suggested in our previous article on this subject.

But what of the sample C collected at the same time and having all of the symptoms of the bees definitely shown to be arsenically poisoned, excepting swollen abdomens? The chemist found no arsenic. As Mr. Hambleton of the Bureau of Entomology has suggested, it may be that much of the arsenic is eliminated by the bees before the analysis is made.

The above information indicates that still further information is needed to establish the minimum fatal dosage of arsenic, for it must be considerably below 0.0004 milligrams, or else the bees have the power of eliminating the poison from their body under favorable conditions. For those who are collecting samples of bees for arsenical determination in suspected cases of poisoning, it may be well to suggest the collecting of those sick and crawling bees with distended abdomens.

Apparently arsenic produces a paralyzing effect on the locomotive muscles of the bee and to some extent on the alimentary tract. The sick bees seem to be forced out of the hives at colder temperatures when they cannot fly, but may take wing with an increase in the outside temperature. This may explain the more numerous complaints of spray poisoning on the cold late springs. Under such conditions the bees might be expected to be found more often struggling in front of the hives. Perhaps, too, the liquid sprays do not dry as rapidly on cold, wet days, thus exposing them to water-seeking bees for longer periods of time. Would an easily accessible, early established source of water supply in the apiary cut down the amount of spray poisoning?

Can spray poisoning be eliminated? It is a serious menace and deserves

further investigation. Cooperation of the orchardist and beekeeper will aid greatly, but orchard conditions and practices often prevent elimination of all dangerous spraying. Repellants have not proven generally satisfactory, usually because of their additional cost. Insecticides other than arsenicals have not yet been found to do the job of protecting the fruit. Education of the orchardist ignorant of the value of the bees in the production of fruit should help this menace.

The beekeepers should be grateful to the experiment stations of Michigan, New Jersey, etc., where experiments are being conducted on the relation of bees to fruit production. The orchardists are awakening. They are cooperating with beekeepers in association activities, in securing appropriations for adequate inspection. We recently heard of one orchard company in New York State desiring a manager for 500 colonies of bees. A secretary of the Horticultural Society of another state recently said, "My district can find funds to finance the bringing in of 500 to 1,000 colonies for pollination purposes this year. We want the bees."

A new era is dawning, but lack of profitable results should not always be blamed on the bees. There are a number of related factors which can only be listed in this article. Among them are such things as the number of colonies, their strength, their distribution or accessibility to the orchards and trees, the type of weather, especially the amount of flying weather with low wind velocity and sufficient temperature above 46° F, or better say 50° F. Then there is the strength and vigor of the trees to be considered, the period of blooming, and the receptive period of pollination and the period of pollen tube growth, and last, but not least, the presence of suitable cross pollinating varieties of trees, or "bouquets" supplied by the orchardist. All the facts should be placed before the prospective orchardist-beekeeper.

More About the Formalin Treatment

By James I. Hambleton
United States Department of Agriculture

THE article written by Mr. H. G. Ahrens, "New Facts About Formalin Treatment," which appears in the February issue of the American Bee Journal, has resulted in a number of comments. It would have been well had Mr. Ahrens continued his experiments further, particularly had he made actual tests of the scales treated in the combs, and then given these to colonies of bees in an effort to ascertain whether the alcohol-formalin, the water-formalin or the formaldehyde gas method of treating combs have any value at all.

While it is true that the Bee Culture Laboratory has taken the stand that in the control and eradication of American foulbrood more emphasis should be given to burning, it has not by any means condemned the use of the alcohol- or water-formalin solutions for salvaging diseased material. Mr. Ahrens' findings cannot have a retroactive effect. In other words, in spite of his findings, the two commonly-used disinfecting solutions are just as good as they ever were.

A study of Mr. Ahrens' article reveals the fact that even though he claimed to have obtained growth when his cultures of treated scales were continued for a long number of days, this fact probably has little or no practical significance. A spore of **Bacillus larvæ** must germinate and produce vegetative growth within a distinct time, limited by the metabolic and morphological changes which take place during the late larval and early prepupal stages of the bee.

In all cases where Mr. Ahrens shows that the scales were treated for the prescribed number of hours in a 20 per cent formalin solution, the incubation period was entirely too long to have made it possible for the spores to germinate within the body of the bee. If the bee had a much longer larval and prepupal period there might be grounds for concluding that the longer incubation period which resulted from treating scales had some practical significance.

Although we do not know just how spores whose incubation period is greatly delayed would affect healthy larvæ of the right age, it is quite reasonable to suppose that they would be harmless. At least practical results indicate that such is the case, for there are many beekeepers who have made successful use of both the water-formalin and the alcohol-formalin solutions.

Dr. C. E. Burnside, of the Bee Culture Laboratory, has recently submitted a manuscript to one of the other bee journals, which deals almost identically with the subject discussed by Mr. Ahrens. It is interesting to note, however, that Doctor Burnside's work will help explain some of Mr. Ahrens' results. Mr. Ahrens mentions that he removed the excess formalin by transferring the scales to a test tube of water before culturing. Had he not done this, the chances are that most of the scales, where immersed in formalin for twenty-four hours or more, would have indicated sterility in a cultural test. Doctor Burnside found that whenever scales were treated with formalin and allowed to dry, paraformaldehyde is deposited, and that when this substance is present the growth of spores is inhibited when in culture. However, when treated scales are washed in order to remove the paraformaldehyde, growth in many cases is obtained when cultured, which without having been washed would undoubtedly have indicated sterility. Mr. Ahrens mentions that in actual practice it is not necessary to wash the scales, and the reason is now quite obvious,, that if such scales had been washed sterility would not have been complete from the standpoint of laboratory tests. Mr. Ahrens also mentions the fact that a suspension of the spores in 20 per cent formalin solution failed to grow in culture. While the details by which he did this are not explained, it is probable that, because of the difficulty involved in washing suspended spores, he did not wash them when taken from the formalin. The spores probably contained enough paraformaldehyde to inhibit growth.

It should be plainly understood that Mr. Ahrens' results cannot have a retroactive effect, and that sterilizing solutions still have a part in American beekeeping. In apiaries where the percentage of disease is high, particularly large apiaries, an economic saving can be made by shaking diseased colonies and treating infected combs. These solutions can also be used to advantage in treating all doubtful material, such as super combs. It should be distinctly borne in mind that the solutions are just as good today as when first advocated, notwithstanding the fact that it has been discovered that the effect of the solutions on spores of American foulbrood may be inhibitory rather than killing.

Bee and Honey Exhibit a Feature at Tampa Fair

One of the outstanding features of the South Florida Fair, held at Tampa, January 28 to February 8, was the bee and honey exhibit. It was the opinion of a number of people who have attended the big fairs in the United States that this was the best exhibit of bees and honey ever shown. The exhibit contained honey from four states: Idaho, New York, Georgia, and Florida; also from the Department of Agriculture, Washington, D. C.

The exhibit from the Department of Agriculture, Washington, showed the flowers with the bees gathering honey; the hive with its different

parts; the extractor and the honey, with samples of the most important honeys in the United States. This was followed by the food value of honey, showing different ways honey could be used. This was a fine exhibit and was made especially for the Tampa fair.

Idaho was represented by the Kingsford Honey Company, who had a fine exhibit of both comb and extracted honey, also beeswax.

The exhibit from New York State was furnished by Adams & Myers. They exhibited comb honey and three kinds of extracted honey: buckwheat, fruit bloom and clover. The individual comb honey sections in the New York and Idaho exhibits created a great deal of comment.

Georgia was represented by F. Lauradour and J. J. Wilder. They had a fine exhibit of honey and wax.

The Florida State exhibit was made up of samples of honey from all parts of the state, gathered and exhibited by Robert E. Foster, State Apiary Inspector. This exhibit drew a great deal of attention because of the large number of different honeys.

Pinellas County Beekeepers' Association had a fine exhibit of bees, honey and wax. The following had individual exhibits: W. K. Lott, Orlando; House & Haynes, Dunedin; J. A. Felts, Terra Ceia; O. M. Bonar, Orlando; Roscoe Haynes, Dunedin; J. T. Padgett, Port Tampa; Mrs. S. R. Stebbins, Thonotosassa. These exhibits were all very fine and contained bees, beekeeping equipment, honey, beeswax, and honey products, such as honey vinegar, honey syrup, cookies, sugar, canned goods put up with honey, honey candy, and many other things.

There were several full colonies of bees on exhibit, also a large number of single-frame observation hives. Live bee demonstrations were given in a large screened cage. The bees in the exhibits were furnished by S. R. Davis, Tampa; A. Lunden, Tampa; House & Haynes, Dunedin.

Robert E. Foster, State Apiary Inspector, had an exhibit containing samples of European and American foulbrood; also a set of pen-and-ink drawings of larvæ and pupæ, representing the different stages of American foulbrood. He gave talks on bee diseases and care of bees, distributed literature on bee culture, and answered all questions relating to beekeeping and honey.

At 10 o'clock on Tuesday, February 4 ("Bee Day"), a large number of beekeepers met in the grandstand. J. W. Barney, Bradentown, acted as chairman. Mr. Brorein, President of the Fair Association, gave an address of welcome to the beekeepers. He assured them that the Fair Association was pleased to have the beekeepers exhibit and would cooperate in every way possible. Mr. Brorein introduced Governor Carlton, who gave a fine talk, in which he told the beekeepers that he was wholly in sympathy with the bee industry in the state and would do all he could to help it to grow. Governor Carlton also said that he saw no reason why beekeeping should not become one of the leading industries of the State of Florida.

Robert E. Foster then gave a short talk in answer to Mr. Brorein's address of welcome, assuring the Fair Association that the beekeepers appreciated the cooperation they had received.

Following Mr. Foster, J. W. Barney spoke on the importance of the bee and honey industry in the State of Florida. He explained how, during the business depression that we have been going through, the bees kept a large number of families in grits and also enabled them to pay their taxes. He also spoke of the menace of American foulbrood, stating that we needed better protection in the way of laws.

The beekeepers attending this meeting enjoyed the talks very much and went away assuring each other that they hoped to meet again at the fair next year.

Bee Men All Optimistic in Utah

Noting huge growth in the honey industry here, O. L. Malmgren, newly appointed director of the Intermountain States Honey Producers' Association of Boise, Idaho, presided at a recent meeting of bee men here. Mr. Malmgren is a prominent Centerville beekeeper. Stressing the need of cooperative marketing and telling of the growth of the organization in two years from fifty members with 15,000 colonies of bees to 500 members with 150,000 colonies, selling honey through the Association which totaled 260 cars, A. W. B. Kjosness, general manager of the group, was extremely optimistic over the future.

G. P.

Storing Combs Over Winter in the South

By Jes Dalton

WHEN I first came south, I wondered at keeping combs stored on colonies the year round. But observing honey coming in both during November and February, I concluded that combs taken off and returned would mean a lot of extra labor and that it was perhaps better to follow the usual plan—leave the combs on the bees, where they would have ample protection, and thus save labor, storage, and leave the colonies without disturbance from very late fall to very early spring.

While visiting Mr. M. Stevenson of Westwego recently, we discussed this matter, and he showed me his plan of putting building paper immediately over the cluster, with the storage combs above, and a small hole through so that the bees could bring down the honey from above, protect the extra combs and still not too badly break their cluster during our cooler spells.

Our conversation came more vividly before me when, during December, I prepared and moved several apiaries with storage combs on (some as high as six supers). Had the weather remained fine as it was when I commenced operations, perhaps all would have been well, but during the time of preparation, including some interchange of combs to assure ample stores, the cleating, closing and also the moving, the weather changed from balmy sunshine to those blizzardy conditions of Christmas, 1929, season that all of us remember. My moving operations ended at the close of the blizzard with fingers more than chilled and no opportunity to inspect the moved colonies, some of which had been opened and prepared at the height of the blizzard.

Examination a week later showed some heavy losses on account of scattered brood nests. I found one colony dead with sixty pounds or more of honey not three inches away. Many small clusters of bees in nearly all colonies died, unable to locate the main cluster.

A colony that did not have a half pound to a pound of dead bees was the exception.

Undoubtedly the disturbance of these colonies and the moving at this peculiar climatic turn had its effect, but I wonder if Mr. Stevenson's plan would not have its merits for all colonies in the South, in a real saving of colony strength during those fitful cold blasts that we have all too often between our fall and spring honey-flows?

Honey Market Conditions

Owing to the light crop, it was impossible for the Louisiana Association to do any blending and exporting this season. The local demand has been larger, at least better, owing to the shortage, and prices also better.

There has lately been a tendency to slumping prices, perhaps owing to greater competition in export on the part of Costa Rica and Mexico, and perhaps also owing to German propaganda against American honey in Germany.

Fireweed is a romantic honey plant, a will-of-the-wisp, coming and going, man following its vagaries, with a sort of wilderness beekeeping. Mr. Dodge has caught its spirit in this delightful verse

Fireweed

By Natt Noyes Dodge

Oh, glorious dweller of the wilderness
Where fire-scarred skeletons of a forest stand
Like old men drowsing in the summer sun,
Your flame-hued cohorts cover all the land
A billion strong: a splendid vict'ry won.

When fire swept, beneath its murky pall,
The virgin growth of cedar, spruce, and fir,
To leave, 'midst smoking ruin, not a spot
Of green to shield the ragged, new-made scar,
Your vanguard came while ashes yet were hot.

Then, as the seasons passed — the soft-voiced rain,
The summer drouth, the soothing mists of fall—
Behold! Your armies held the land, their flags
Of lavender and orchid-pink hid all
The fire-charred stumps, the fallen, blackened snags.

Your far-flung flanks flame full upon the hill.
Throughout the valley, massed to meet attack,
Your legions stand, each glowing, ready spear
Held high; and on, and on, beyond and back
As far as sight may reach, your hosts appear.

Within your ranks a gentle murmur sounds,
Like playful zephyr 'midst the close-grown trees,
Your blossoms dip, to rise and sway again—
The work-song of a million golden bees
That seek your limpid nectar, clear as rain.

And thus you are today, unmindful yet
That enemies are massing near at hand,
The clover, willow, and the wild salal,
The blackb'ry, and the brake — a motly band,
But fall before their ragged line you shall.

For years the war must rage, each smoky fall
Will see your feathey seed-wings scarcer grow,
Your ranks will thin. The eager searching bee
Will seek a fairer pasture. Time, tho' slow,
Will make your name a happy memory.

Washington.

"Hootch" Story Gains Publicity

The little story which appeared on page thirty-one of our January number, about the bees which raided the sugar stocks in Virginia and went on a spree, has caught the attention of newspaper writers. Quite a number of clippings have been received about it.

Jes Dalton sends in several from papers in Louisiana. He says: "This story got advertising all along the Atlantic Coast. It reminds me of a story about poisoned honey in a book, 'Two Great Retreats,' published by Ginn & Co. for high school work in 1896. One was the 'Retreat of Napoleon from Moscow' and the other the 'Ten Thousand Greeks.' I give it to you for comparison. Napoleon, a great chosen leader, wrecked and lost everything, and Xenophon, an untrained man, took charge and brought the Greeks back when everything, even the camp equipment, had been lost. On the route back, they ran onto the honey. This was 'two days' march' from the city of Trebizond.

"In the present instance, I believe, they are way off when they attribute it to nectar from Camellia Japonica, for this plant is about in bloom now and, while very beautiful, its blossoms are almost like paper flowers—odorless and lifeless."

The reference to Camellia Japonica is from a clipping, taken from one of the southern papers, in which a reader relates the account of the march of ten thousand Greek troops into the Persian Empire about 390 B. C., when they came across and ate honey which was intoxicating and believed to come from the flowers of Camellia Japonica, which contain opium.

The "Literary Digest," under the title "The Scoff Law Bees of Norfolk," comments on the story:

"The spectacle of a prohibition agent trying to arrest a swarm of bees for violating the dry laws would add much to the joy of life. An editorial in the Boston "Evening Transcript" carries the surprising information that these busy little insects have turned to bootlegging. The news, we learn, comes from Norfolk, where there is a warehouse holding sixty thousand tons of sugar." It then goes on with the story which appeared in our pages.

Then they question, "Does the Law of the Excellent Mr. Volstead Apply? To the layman, it does not seem that honey even with a kick like that of a mule could be described as manufactured for beverage purposes, but if the law is enforceable, are the bees to be judged guilty, or are their owners guilty?"

"The incident suggests further possibilities. It may create a simultaneous demand for bee sugar. Bootleggers may turn to beehives for stock in trade and become as busy as a bee. It is conceivable that the consumption of sugar will become so great that owners of plantations in Louisiana and beet sugar fields in Utah will chiefly care about the duties, relieving Senator Hootch of a great deal of anxiety."

"But the performances of the bees of Norfolk are a stiff load for many good people who have based their highest maxims upon the industry of the bees. There is a tribute of Isaac Watts which has been relied upon by many a follower to turn youthful footsteps in the right direction:

How doth the little busy bee
Improve each shining hour
And gather honey all the day
From every opening flower?

Who will dare quote the familiar lines like this?:

"And gather honey all the day
"With anti-Volstead power."

It seems that a neighbor of Mr. Eichleburger's, whose bees got so powerfully tanked, a Mr. Jordan, also had a similar experience. He wrapped a comb full of this honey up in a nice package and mailed it to the editor of the Literray Digest and another one to the editor of the Boston Transcript. He made it plain that he resented the implication that there might have been misinformation concerning the activity of the bees.

The 1929 Honey Crop in the West Canadian Prairie Provinces

We have before us the January 9 edition of the Manitoba Free Press, printed at Winnipeg, Manitoba, which carries on its first page a report of the honey crop in the prairie provinces of Canada.

The report shows a total production in Manitoba of nearly 7,000,000 pounds and an average of 144 pounds per colony; in Saskatchewan of nearly a million pounds, with a production of 100 pounds per colony. The total crop for Alberta is approximately a half million pounds, with an average varying from 100 to 240 pounds per colony.

All provinces show an increase of honey production over the previous year.

The significant part of the article is that part of the report of Mr. L. T. Floyd, Provincial Apiarist of Manitoba. In reporting the spring count and fall count of colonies of bees for the province, he shows a reduction in fall count over spring count of in the neighborhood of 5,000 colonies.

This is accounted for from the fact that the plan of destroying the colonies in the fall and extracting the honey and buying new packages in the spring is growing in popularity. Mr. Floyd explains this by the fact that the risk of winter loss is thus disposed of and that, due to lowering of prices and good delivery of package bees from the Southland, this plan can be carried out satisfactorily.

An instance is given in the case of one beekeeper, J. C. Rippingdale, of Oakbank, who reported that from 133 two-pound packages of bees secured on April 15 and killed on September 15, he extracted 28,750 pounds of honey and got 300 pounds of wax.

We have had several instances reported in the northern states of the United States where, although not a complete killing of the bees was practiced in the fall, the practice had already grown of uniting all the weaker colonies with the stronger ones and thus cutting down the number of colonies to be wintered to half the spring and summer count, but carrying over much stronger colonies; the decrease in numbers to be made up the next spring by the importation of package bees from the South.

It has for several years been a moot question as to whether such a practice could be carried on with satisfaction. The stumbling-blocks have always been of the possible difficulty of having package bees delivered on time and in satisfactory condition. This, however, seems to be removed with increase in the production of package bees in the South and much safer methods of shipments and minor losses on receipt.

A Large North Carolina Beekeeper

Eli Winesett is probably North Carolina's biggest beekeeper. Mr. Winesett and I are special friends and have been associated together for many years. I was the man that sold him his first bees; helped transfer twelve old box-hives into modern hives which he purchased from me. This was in 1910. He is now located at Whiteville, N. C., with about 1300 stands of Italian bees. His crop last year was 75,000 pounds of tupelo gum honey. I had the great pleasure of visiting him last spring and visiting some of his yards. He has twenty-two in number.

G. F. Jones, N. C.

So We've Observed

"Why is a ball player like a bee?"

"Because they do a lot of fanning."—J. B. D.

Does the Tomato Flower Secrete Nectar?

By John H. Lovell

ON page 15 of the January number of the American Bee Journal there is an article entitled the "Composition of Nectar," in which there is given the chemical analysis of the nectar of four different species of plants, the garden tomato being one of them. Do the flowers of the tomato secrete nectar? I question it.

In Minnesota Bot. Studies, 1896, Part IX, pages 635-643, Bruce Fink says that the flowers of the tomato are regularly pollinated by pollen-collecting bumblebees. He further states that he has never seen the flowers visited by butterflies, which, of course, feed only on the nectar of flowers and never on the pollen. Neither have I ever seen the bloom of the tomato visited by Lepidoptera.

Prof. A. G. B. Bouquet, in his bulletin on the pollination of tomatoes (Oregon Agr. Exp. Sta., Bull. 156, 1919,), makes no mention in his description of the flower, of the presence of nectar. He, too, says that the flowers are pollinated by bumblebees gathering pollen. No one, so far as I can learn, has ever found nectar in the blossoms of this common fruit.

While many botanists place the tomato in a separate genus (Lycopersicum) today, it was formerly, and still is by some systematists, placed in the genus Solanum, which, according to Mueller, Knuth, and all other flower ecologists, contains only pollen flowers, or flowers without nectar.

In southern Maine I have never been able to find any nectar in the flowers of the tomato, and they are here very sparingly visited by insects. In my opinion the blossoms of this species are pollen flowers—i. e., they do not secrete nectar, but depend on the allurement of the pollen to bring about pollination.

How, then, do you ask, has it happened that an analysis of its supposed nectar has been given in the article mentioned above? Ah, dear reader, this is your conundrum, not mine. Maine.

A Honey Business That Pays

By Charles Olive

FRED MARQUETTE, near Fargo, North Dakota, who has made such a success with his honey business, started it as a sideline with one colony of bees ten years ago. He found the bees so profitable that he procured more colonies, and now he has set a record for single-hive comb honey production.

At present he has three hundred and twenty colonies, which produce approximately 64,000 pounds of extracted and comb honey during the year. This is an average of 200 pounds per hive. Of course, with so many hives to look after, he no longer does any other work, but devotes all of his time to the bee farm. His family of eight persons obtains its living out of the labors of the busy little insects.

Marquette himself has built up his bee colonies, giving each division a queen. However, he owns one colony of Caucasian bees, which was shipped in from the state of Alabama; and this has, according to his figures, made a world record for the production of honey. The colony produced, from April 20 to September 15, a total of 593 pounds of honey. The previous world record of 400 pounds of comb honey was held by the late Dr. C. C. Miller, of Marengo, Illinois.

The Marquette apiary comprises about an acre of ground and is located near a sweet clover field. It is almost surrounded by a windbreak of trees, which protects the hives from the cold winds of spring and fall. Marquette alone does all the work connected with the bee farm, except for a few days in August, when he employs some hired help. All of his honey is officially graded by the bee department of the North Dakota Agricultural College as fancy water white, the highest grade provided by the U. S. grading rule.

Nearly all of the hives contain Italian bees, and Marquette believes that probably 90 per cent of the bees in this country are of the Italian tribe. However, there are other popular races of bees, including the Caucasians, Carniolans and Cyprians. The latter are considered the most ill-tempered of the four species. "The Caucasians," says Marquette, "are the gentlest and most industrious, and defend their hives well against robbers."

He has kept a close watch of his record-breaking Caucasian hive, and has found that these bees fly out earlier in the morning, gather honey later in the evening, and are usually more active on cooler days. These qualities make them predominantly preferable in the Northwest because of the extra number of working hours that they add to the honey gathering season.

Mr. J. A. Munro, State Entomologist of North Dakota, is greatly interested in the achievement of Marquette's Caucasian colony of bees. He also says that the production of honey in the state has grown from 708 colonies in 1920 to nearly 20,000 at the present time. This rapid development in beekeeping as an organized industry, he declares, is due largely to the important part that sweet clover plays in the agriculture of the state. He figures that about one twenty-fifth of the sweet clover acreage in the state is utilized by the bees. The clover is a most excellent source from which bees can gather and store large yields of high quality nectar.

Too Much Packing

By Adam Scott

I read with much interest the article of Mr. H. F. Wilson in the January issue, page 28, under the caption "Too Much Packing Not Good."

A few years ago all that I knew about bees was that they produced honey and would sting. My father, back in Ohio in the olden days, kept a few colonies in the hollow log "gums"; they were little black bees. The only reason now I have for his keeping that strain is that he figured the small bees would not eat as much as the larger ones. He was Scotch!

A few years ago I bought four stands from a neighbor, brought them home in the winter. In the spring I watched for the bees to come out at fruit bloom. None came—"American foulbrood." The only enemy in the old days was moths. We didn't know then that they only came into the hive as scavengers to assist the beekeeper in the fight against spread of contagious diseases to bees.

After obtaining all the data I could from the Entomology Department at Washington, books and bee journals, I started again with "selected" stands. In the fall I proceeded to box and pack as per the data received. I take it that I had packed them so warm that they were unable to diagnose the weather outside, and many of them came out and dropped, chilled, so that the colonies were so weakened that they went into the spring drive for honey

with a fatal handicap. I bought several colonies early that spring that had stood out in the open all winter, 10 degrees below zero, without even a windbreak. I watched both lots carefully. The ones not packed were strongest, most active and gathered more honey than the others. This experience satisfied me that, as Mr. Wilson says, too much packing is not good; will add, not necessary.

Missouri.

Problems in the Orchard Districts

By I. L. Neill

Beekeeping in the orchard districts has its problems as well as its compensations, growers of the Yakima Valley declare, after combating loss from lead spray, codling moths and other enemies for the past several years.

Bees are doubly busy in the fruit sections, as they not only make honey, but pollenize the fruit trees, this having been proved to be the most inexpensive and successful method of pollenization. Some orchardists keep bees as a sideline, using them for this purpose; others rent colonies of bees during the blooming season.

Apiarists who rent their colonies for pollenization get widely varying sums in return, according to a check made by J. O. Kane, of Parker, secretary-treasurer of the Yakima County Beeskeepers' Association. In the Yakima Valley the rental charge is only $1 to $2.50 per colony; in one section near Spokane it averages around $8; in the Wenatchee Valley, $5 and 6, and in the Hood River section in Oregon, $5 and up.

"The cheapest is often the most costly, with bees as with anything else," Mr. Kane said. "A weak colony is a poor investment at any price, while a strong colony is a profitable investment at even as much as $10 rental."

"While the orchardist runs a certain amount of risk in hiring bees to help assure a full crop of fruit, his are nothing compared to those of the owner of the bees," Mr. Kane said. The rate of depreciation on bee equipment is high when it is transported from place to place; the inside fixtures of the hives are often damaged, and the mortality among the bees themselves is high, even under favorable conditions.

And when the orchard is reached—then the fun begins! When spraying is being done—which is almost a constant process from spring to late summer—the beekeeper must move his bees early in the morning or late at night to get them out before the fatal lead spray is applied. Then there is the danger of bees picking up diseases in old combs, equipment of dead colonies in cliffs, rocks and inner walls of buildings previously inhabited by bees.

The fresh nectar obtained during the fruit blooming season is a stimulus to the queen, promoting rapid egg laying, and the sudden moving of the colony from an orchard to a location where no nectar is available at that time of year necessitates the requeening of the colony, a costly and sometimes unsuccessful practice.

"In the Yakima Valley during the last few years the monetary returns to the beekeepers have been insufficient to cover the losses and the expense of moving to and from the orchard," Mr. Kane declared. Beekeepers are inviting the orchardists to their meetings that a mutual consideration of their problems may be had.

Discover Two New Vitamins

No less than two new vitamins have recently been discovered by English scientists. Katherine Hope Coward and her colleagues at the Laboratory of the Pharmaceutical Society here have just published a paper describing a new vitamin which has somehow escaped notice before. Scientists do not yet know whether this new factor is necessary for the human race, but Miss Coward's experiments have proved that it is necessary for the growth of that all-important animal, the experimental rat. No name has yet been given to this vitamin. It has been found in fresh milk, lettuce, grass, ox muscle, liver, and wheat embryo.

The other new vitamin has recentyl been described by Vera Reader of the Biochemical Department, Oxford University. The original vitamin B was said to prevent beri-beri. Scientists found later that vitamin B really consisted of at least two separate factors, and they decided to call them B1 and B2. Miss Reader now has found that in the vitamin B of yeast there is a third growth factor which is chemically distinct from either of the other two. She suggested the name B3 for this new factor. Like B2, it can be destroyed by heat.

The pellagra preventing factor in foodstuffs, known as P-P, was also once thought to be part of vitamin B.

It is quite apparent that we do not know all the facts about vitamins yet. At first glance, honey would not seem to be so constituted as to expect vitamins in it, yet it may have something which is of high dietetic value.

Rosser's youngster getting his vitamins direct from source

Cod Liver Oil and Vitamin D

By John H. Rosser

Betty Bee talks of cod liver oil and vitamin D. The "New Health" magazine (English) says that the codfish spends his winter in the sunless North Sea and has need for his store of vitamin D. He obtains it from the smaller fish, which in turn get theirs from the plankton that basks in the brilliant sun of the northern summer. The plankton rests on the surface of the sea, so that it gets all the sun there is in summer time.

We are told to get our vitamin D by sun baths, and I have two little brown-backed boys who get the daily dose of vitamin D in our climate, which is like that of California.

One of our boys, however, has a large "tummy," and since a large "tummy" may occur with mild rickets, I decided to be sure and fed cod liver oil also.

Knowing the peculiarities of this child, I decided he would not take cod liver oil, as he never likes new dishes. (Are we born conservative?) So when the bottle of Scott's Emulsion containing cod liver oil arrived, I praised it and said "We won't give Jacky any." He promptly decided that we **should,** and now they call it their "nice," and each day **they** see that they have it.

Possibly this idea is worth while to other beekeeper parents. The boys are four and one-half and two and one-half years of age.

Let us hope that honey will prove to contain vitamin D. (All investigations so far indicate that there are no vitamins present in honey.—Editor.) We use honey just as Betty Bee does and colds are almost absent from all of us.

Queensland. Australia.

Four beekeepers of Haiti. Left to right: J. Breton, E. Nazon, Francois Moise, and A. Breton. All are from Port-au-Prince, except Mr. Nazon, who is from Cape Haitien.

Bees and Beekeeping in Sunny Haiti

Part Two—Development, Continued

By Roger C. Smith

Diseases and Enemies of Bees in Haiti

THE most common bee disease occurring in Haiti is bee paralysis. This is non-contagious and is controlled by requeening. Bee paralysis is worst in wet weather. The common practice of requeening when a hive has been paralyzed is to remove the brood and place in a strong colony. The frames containing brood are then taken from a strong hive and put in the one having paralysis. The bees then rear a queen from the brood from the strong hive. The symptoms of this disease are large numbers of dead bees on the flight board, with the gradual weakening or dwindling of the colony.

The disease known as "logue" is ordinary mold growing over combs. When the colony is very weak, during the rainy season, molds may invade the hive and ruin the combs. This, however, rarely, if ever, occurs when the colony is strong.

The mite disease is said to occur here, according to Mr. Nazon, but the disease is reported as not being serious. The writer has not yet found it. The two common species of waxmoths occur in Haiti, and their destruction of combs is almost phenomenal. Weak colonies and combs in storage are very likely to be ruined by them. The common species **Galleria melonella** is the more common species. **Carcyra cephelonica Stt.**, the lesser waxmoth, is second in importance, but very common. The usual method of procedure with infested colonies is to cut out the infested combs, remove as many larvae as possible, then melt the wax for selling. Beekeepers never fumigate the frames to destroy them.

A native type hive at the College of Agriculture at Damien, where the experimental apiary is located.

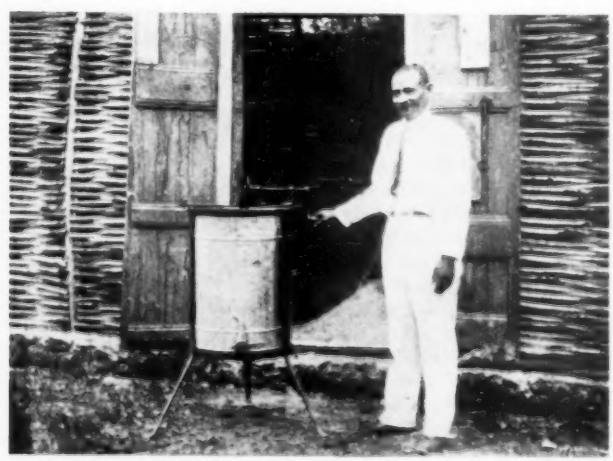
Robbing

Beekeepers have much trouble with robbing, particularly during the dry season, when there is little nectar available. It is not surprising that there is robbing, for many of the hives are in very bad condition indeed and many colonies are weak. There is ordinarily no robbing during the logwood flow.

Swarming

Beekeepers lose a good many swarms of bees. A watchman is often hired to watch for swarms in most apiaries. The watchman is given a gourde (20 cents) extra pay for each swarm that he hives, to cause him to be more watchful. One often sees colonies of bees in trees, and the writer removed a swarm from a house in August. It had become established between the weatherboarding and inside wall and had accumulated a large amount of honey. The beekeepers practice dividing of colonies or artificial swarming to a greater extent than they should. It is a common practice to divide a strong colony into three or four

The Breton apiary near Petionville. It is located in a logwood grove and is well cared for



French type two-frame extractor of Mr. A. Breton in front of his honey house. The sides of the building were about to be plastered. Construction of the walls is nicely shown.

nuclei, giving only two or three frames to each. They divide after the honeyflow, generally in April and May. Consequently robbing out of the weaker nuclei and loss by dwindling is one of the commonest losses of Haitian beekeepers. Loss due to queenlessness is also common, for no systematic requeening is practiced. A queen is retained as long as she will live. Supersedure is the chief method of requeening.

Stealing of Honey

There is some theft of honey from the stands, but, like most thievery in Haiti, it is generally an "inside job" and the watchman is the guilty party. So the amount of thievery depends largely on the character of the watchman. Beekeepers often give the watchman a home and small patch of ground to enable him with his wages to obtain a living and thus reduce the temptation to steal.

Government Regulations

At the present time there are no regulations nor restrictions upon the importation of bees or bee equipment into Haiti. Mr. Sechrist pointed out the advisability of some regulations several years ago, but nothing was done. It is the practice of officials of the port, however, to refer shipments about which there may be some question to the Service Technique for inspection, but this has never been done with any importations of apiary equipment. There is no Government machinery for carrying on inspection nor enforcing quarantine regulations.

There is an import tax of 5 per cent ad valorem on bee equipment, based on the cost delivered in Haiti. This includes the cost of shipping, crating, cartage, consular fees, as well as the wholesale cost.

Kind of Bees in Haiti

Italian bees are the common race in Haiti almost without exception. Some leather Italians have been seen, but most of the better apiaries are equipped with golden Italians. Hybrids are common. These range from near golden Italians to small, very dark or nearly black bees. No Caucasians have been seen.

Yields and Rate of Nectar Flow

Ordinarily in the tropics there is no peak of nectar flow, the fluctuation during the months being very little. This makes the large yields of the temperate regions impossible to attain, for large yields are dependent upon short, very intensive flows, following a suitable period for building up the hive strength. However, in Haiti we have a considerable peak during the period, October to March, particularly in the logwood region, and a marked depression during the dry season. This is favorable for larger yields.

A yield of twenty to twenty-five gallons of honey per hive during the year is very high, but is attained in the North. Mr. Nazon informed the writer that he had obtained a barrel (thirty gallons) of honey from one colony in one month. This, of course, is exceptional. More commonly the yield is five to fifteen gallons per hive in a year. Beekeepers expect four gallons for each super, so if the colony is strong enough to fill two supers the yield is then eight gallons. In the peak of the logwood bloom they expect to have two supers filled in ten days. Marked difference in swarms occurs as to their productive capacities. They explain this by differences in queens.

No careful observations on the honeyflow during the season have yet been made. The honeyflow responsible for the materials comes at least a month and perhaps two months earlier. The peak is January and early February. During the remainder of the season the bees are doing nothing more than maintain themselves, and most colonies materially reduce their stores in this period.

Table III on page 132, March issue, shows the monthly exportation of wax for two years.

There is a peak immediately following the close of the big honeyflow and a larger one at the end of the slack season. This latter peak is the more interesting, for it probably represents the wax from swarms which did not survive the summer season, when there is no special honeyflow.

Needs and Future Development of Beekeeping in Haiti

First, of course, better beekeepers are needed rather than more beekeepers. They must be taught to produce clean honey. It must have no odor of fish, kerosene, or in fact anything except pure honey. Light and dark honeys must not be mixed. Proper shipping and marketing containers must be available and at prices which will enable them to sell their product at a profit. Beekeepers must be taught to use better fitting hives and thus reduce robbing, waxmoths and brood diseases.

Experimental apiaries under competent direction must determine the proper management which will bring best results in the regions. Data on the rate of brood rearing and nectar gathering throughout the year are necessary. One or more good queen-rearing yards should be established, for many queens are needed by the beekeepers of Haiti.

There is no question that beekeeping in Haiti could be greatly expanded. A beekeeper should be able to care for one hundred to one hundred and fifty hives, so that the number per man could be greatly increased. But the most urgent problem is not expansion, but rather a general improvement of beekeeping and of the quality of the honey now being produced.

Renewed War on Fruit Fly to be Waged This Spring

The first warm weather in the South will see a renewal of the warfare waged by Federal and State forces against the Mediterranean fruit fly after its discovery in central Florida in April, 1929. Officials of the U. S. Department of Agriculture state that much the same methods of inspection and clean-up will be used this year, though the campaign will have to be more intensive and far-reaching, because the success of last year's drive in reducing the number of the pests will probably make surviving infestations harder to locate.

So far as is now known, the outlying points of infestation discovered during the campaign of last spring and summer in Florida have been cleared of their last fly, and the area where the insect is likely to be seen again this year has been reduced to the territory where it was first discovered and where its initial development in this country probably took place. But Federal entomologists do not feel that it will be safe to let these outlying areas go uninspected, because of the possibility of a few insects having overwintered in some hidden corner. A single female laying a batch of eggs could start one of these infestations all over again.

In spite of the fact that not a single fly has been seen in Florida since last fall, it will be necessary to have a full force of men in the original infested area when the breeding season returns. The pest hibernates invisibly within any one of a number of fruits and vegetables, and even a series of chilly nights much colder than Florida experiences in the winter will not kill off all the brood.

The inspection force will need to be at work in the great peach belt of Georgia as well as in the citrus and truck regions of Florida. Peaches are just as fair game to the hungry grubs of the fruit fly as are oranges and grapefruit, and if the fly should once get started in Georgia it would not only work havoc in the peach orchards, but would be in a much more favorable position to begin a westward march than it now is, in its confined area within the Florida peninsula.

More Adventures of the Bee Fairies

By Aunt Laura

(What has happened: Four children and their Aunt Laura are changed by a fairy bee, Fleet Wing, into bee fairies and allowed to visit the colony. They learn about gathering water and the making of honeycomb.)

* * *

Chapter 3

"But you promised to tell us about Madam Poorsite," exclaimed Dickey as they turned to leave the now nicely-started cells.

"So I did," replied Fleet Wing. "Of course, for really she is one of the most important members of our family."

"You mean she thinks she is," interrupted a jolly looking bee who was energetically bustling about.

"Why, hello, Imp, where did you come from?" inquired Fleet Wing.

"I've been out after nectar—just got in—and say, I am tired; but I had a gay time. This is my first day gathering and you should have seen the splendid lot of nectar I brought home." Here Yellow Band and Fleet Wing exchanged glances.

"I've been clear over to the clover field and I brought back the biggest load of nectar, all I could possibly carry. I gave it to Miss Motherly to take care of and she said it was the very finest lot she ever saw," said Imp gleefully.

Once more Yellow Band and Fleet Wing exchanged glances. Then as Imp hurried along the frame to tell of her success to other bees, Fleet Wing whispered to the bee fairy children, "Imp is a very young bee, and all young bees are inclined to talk that way. The first time they are trusted to go for nectar they are so proud and pleased they just must strut and brag. I have no doubt Imp stopped every bee she met to display her treasure. We all have done it. Really, though, the first day of gathering is about the most exciting and enjoyable event of one's entire life."

"Indeed it is," agreed Yellow Band. "We cannot help being happy and enthusiastic, for with that first nectar we feel we are really helping the family grow and thrive. Indeed it is a day to be remembered."

"Can't **we** get some nectar?" suggested Robert, who did not want to miss a single new experience

"To be sure," replied Yellow Band, "but first—"

Just then Imp came up again and spoke: "You were just mentioning Madam Poorsite. Do you know she even had the nerve to stop and challenge **me?** And when I showed her my fine load of nectar she told me to quit my nonsense and move on. Now wasn't that just like her, the old crosspatch!"

"What makes her so cross?" inquired Mildred.

"Come over here out of the way and I'll tell you. Her story is a very interesting one," replied Fleet Wing, leading them to a quiet corner. Then she continued: "Madam Poorsite has been a most remarkable bee. She is very, very old. Why, if she lives until next Sunday, they tell me, she will be four months old, and she has had adventures enough to kill half a dozen ordinary bees. Then, too, she has done such splendidly helpful work for our family, wherever needed, carrying water or bringing in nectar, cleaning up the house or taking care of the babies, and though she has always been a bit inclined to boss everyone, she was not especially cross until she met with a sad accident which entirely changed her disposition.

"While it is a secret Madam Poorsite would not have outsiders know for the world, I am sure she would not care if I tell you," went on Fleet Wing, lowering her voice, "but the truth is (here Fleet Wing spoke in a whisper) **she has lost her sting!** She acts cross and officious and disagreeable so no one will guess her misfortune. In that way she is really an old bluff, though she can BITE if necessary."

"Just like you said yesterday, isn't it, Aunt Laura?" whispered Mildred. "Quite often the noisiest, most troublesome bee is the one that has lost her sting and takes to buzzing and zipping about your face." Aunt Laura nodded.

"Some think," continued Fleet Wing, "that when a bee loses her sting she dies; and in most cases she does, but not always. It is like this: As you know, God has given to nearly all of His creatures a way of protecting their homes and their babies. Now honey is the most delicious and precious of foods, and all sorts of insects and animals, as well as men, would destroy us for our treasure, so our Heavenly Father gave to the honeybee a little weapon that is very effective against all of our enemies. It is called a sting and is like a tiny little needle, though sharper than any sort of sword or knife. When a bee is working and does not need it, this weapon is neatly tucked away within her body, but when attacked or pinched or angry, the bee has it there and ready for immediate use, to be pushed into any object at hand. The sting is in two parts, and along one side of each part are tiny barbs, bent backward, which makes it quite difficult to draw the sting out. At the base of this sting within the bee's body is a sack of strong poison, which flows through the groove between the two parts of the sting, and wee muscles keep pumping the poison from this sack into the wound for quite a while."

"And is it to keep the poison from being pumped into the wound that we try to get the sting out quickly?" asked Robert. Fleet Wing nodded.

"And is it the poison that makes our hands and faces swell when we are stung?" inquired Doris May. "And makes them burn so?" added Mildred.

"The very reason," replied Fleet Wing. "It is the poison, and a most splendid way of defending our homes, I assure you. When we are very busily gathering nectar we are usually better natured and not so inclined to sting, but the poison then is stronger and, I have been told, its effect is more severe. But to go back to Madam Poorsite:

"As I said, she had done well and faithfully all sorts of work about the house, but she felt she was getting too old to be of much more use, so she declared she intended to fly away to die, for you know it is our custom when we get very old and unable to work well, instead of staying around to be fed and taken care of and in the way, we quite often crawl or fly off to die alone. She had just returned with what she herself told me was her **last** load of nectar and was standing near the entrance resting, when bump, BUMP, **BUMP,** something hit our house, quite tearing it off its foundation! We were so taken by surprise that for a moment we scarcely knew what to do; but brave Madam Poorsite knew. She sprang to the attack, courageously issuing orders, directing our police women, leading our defending party, and quickly driving that dreadful enemy away. When, still angry and deter-

mined, she once more alighted upon our doorstep, we all knew and realized it was her prompt action and courage that saved us—but alas, her **sting was gone!** We felt we could not possibly spare her after all that; but it took a great deal of coaxing and argument to convince her she was still needed. However, finally we persuaded her to become our chief police woman, and I think everyone agrees with me, what she may lack in sting she makes up in biting and in general efficiency and courage."

"What was it that disturbed your house?" asked Dickey, after a moment's pause.

"A goat, a dreadful, silly, awkward animal hitched to a cart," replied Fleet Wing indignantly. Then she added, with a merry twinkle in her eyes, "And driven by two little boys—"

How the bee fairy children and their Aunt Laura laughed.

"Oh, Robert and Dickey, it was you and that bad Billy the day he ran away with you and bumped into the beehive," exclaimed Mildred.

"Yes," said Robert, "and both my eyes swelled shut and Dickey had the funniest fat chin—"

"Well, of course, some of us did that," replied Fleet Wing. Then she added, "But I certainly hope that disgraceful Billy, as you call him, learned his lesson. Madam Poorsite herself told me she put that sting just as near the middle of that creature's nose as possible and she **hoped** he felt it!"

"Oh, he did, he did," laughed the bee fairy children. "He has not gone near the bee lot since."

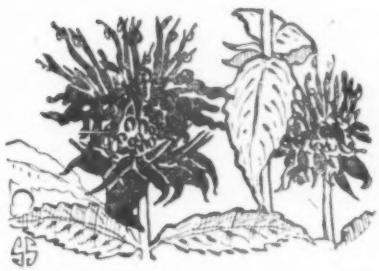
(More adventures of the bee fairy children will be given in our next issue. Please write and tell Aunt Laura how you like this story, and perhaps some day our kind Mr. Editor may spare us a little space to publish some of your letters. Maybe you would like to get out your crayons and color the pictures or take the Journal and let the teacher read the story to the children at school. Yours, Aunt Laura.)

Russia Makes Syrup Out of Watermelons

Watermelons instead of cane will be the raw material used in a new syrup factory recently established in Stalingrad, formerly Tzaritzin, on the Volga. The product, known as "nardek," has long been made by a crude hand process, and is so popular that beekeeping has practically disappeared from the district where it is used. The better grades of syrup are used in cooking and confectionery, and the poorer grades in the manufacture of alcohol.

N. N. Dodge.

Wild Bergamot



A close rival to goldenrod and wild aster for the honors of the autumn roadside is the straggling, touseled blue flower known variously as wild bergamot and horsemint. It holds out against the frost quite as well as they, it endures dust as bravely, and it holds up to the passer-by its little explosions of electric-blue flowers that are more eye-compelling even than the asters. It sweeps across the whole eastern two-thirds of the country, from Canada to the Gulf, thriving best in straggling brushlands or open woods, and often taking complete possession of long patches of roadside hedges or between-field fencerows. Thriftless, a weed if you will, it demands no more than a poet's sustenance and gives us a poet's pay therefor.

It is not always blue. A few species go in for red, and they achieve in this hue an even more piercing effect than the arc-light tint affected by the blue varieties. One species, now considerably used in cultivated flower gardens, is of such a vivid, assertive, even quarrelsome quality of cerise that it always has to be planted by itself. There simply is no other flower that can grow near it without clashing, not even a white one. Why this flaming plant should have got the name **Monarda didyma** is beyond guessing; there is nothing in the least doubtful about it.

The wild bergamot of the North, **Monarda fistulosa**, has corolla tubes so deep that as a rule bees cannot reach the nectar. In some cases it is reported as yelding freely. In parts of Wisconsin, Monarda fistulosa can be depended upon to yield an abundance of nectar every season. This is the most important species to the beekeeper. In Texas it is a source of large quantities of surplus honey of a clear, light-amber color and a decidedly minty flavor.

The wild bergamots are very easy to cultivate. If you want to transplant a wild one, just go and pull it up by the roots, carry it home and stick it in the ground with a drench of water. It will grow without further attention. The plants propagate themselves to a very considerable extent by underground runners, and are hardy against even the stiffest winters of the nearer Northwest.

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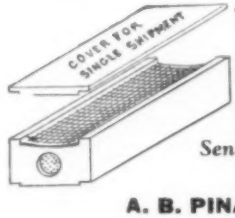

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THE EDITOR'S ANSWERS

When stamp is enclosed, the editor will answer questions by mail. Since we have far more questions than we can print in the space available, several months sometimes elapse before answers appear.

DISEASE—PACKAGE BEES

I had three stands of bees, two last year's swarms and one old colony. The old colony died or froze out during the winter. I gave them a new queen last August or September, which they accepted all right. I had two different bee men examine them last fall, with no signs of disease. They had plenty of honey, but there seems to be a foul smell from them.

1. Is there any place I could send a sample of comb to be tested for disease? Would it be safe for me to let the other colonies have their honey?

2. Do the different companies send instructions for handling package bees when ordering package bees? MISSOURI.

Answer—1. It is not likely that those bees died of disease, and the foul smell that you perceive is probably of the bees that died in the combs. Remove them as much as possible before putting any bees in those combs. If you should find any dead brood, however, that is rotten, you had best not put any other bees on those combs until they are examined by an expert.

2. Mr. James I. Hambleton, United States Apiculturist, at the Bureau of Entomology, Washington, D. C., is a very reliable man and very accommodating. If you will send samples of suspected combs to him, with an explanation of your dilemma and a request for his opinion, you will get very definite information. Such samples should be packed carefully so that in case of disease there will be no danger of spreading it.

3. The first article in our March number is very explicit on packages from the South. It shows great experience. To hive packages of bees, just open the package so that the bees can get out and place it in a super above a hive of such combs or comb foundation as you have prepared. If the queen is caged, open her cage. Probably the shipper would give you useful instructions on how to proceed, but there is nothing difficult about it.

LOSS FROM MOVING

I have a difficulty concerning bees that I would like very much for you to help me on.

I have lost two colonies of bees this winter. They were in one-story, eight-frame hives. Both hives had about twenty or twenty-five pounds of honey left in them after the bees were gone. Evidently they didn't starve.

Both hives have been moved this winter. I moved them about twenty feet, bunched them up and put corn fodder on the north and west sides of them. One hive was moved about a half mile. There were no dead bees left in this hive when I first discovered that they were gone. Both hives had capped cells that, as far as I can tell, were empty. The caps were slightly depressed; part of them had tiny holes in them. One hive had three capped queen-cells with nothing in them but a yellow waxy substance. I lost quite a few colonies one winter from this same cause.

Did I make a mistake by moving my bees to put them in winter quarters?

I have read books on beekeeping and books on bee diseases, and none of them describe anything like this. I know that a one-story, eight-frame hive isn't enough to winter a colony of bees in, but when they die with honey still in the hive it is more than I can understand. MISSOURI.

Answer—Yes, you probably made a mistake in moving your bees to put them in winter quarters. You must bear in mind that bees learn the location of their hive at their first flight, and that they always come back to it, unless it is seriously impressed on them that their hive has been moved. Many people lose bees from this cause. When we move bees, we do it at a time when they can still fly out, and we move them before they fly in the morning. Then we impress it upon them that something is wrong, by smoking them and disturbing them seriously after the moving and placing a slanting board in front of their entrance, so they may notice that something has been changed in their location.

A one-story, eight-frame hive is sufficient to winter bees in, but those who use them have found out that there is not enough food in such a hive to rear all the brood they should have in spring. So they have added what they call a "food chamber," which is another story. We much prefer our large hive, which furnishes in one story all the room they need for honey and for breeding.

Your colonies probably lost enough bees from the change of location to weaken them so as to make the bees die in cold weather.

STARTING WITH PACKAGES

I have never had any experience with bees, but I am planning to get a couple of colonies in the spring. I am writing this to ask you if I send for a couple of two- or three-pound packages will it be all right to put them in hives equipped with frames and foundation, or will it be necessary to feed them in some manner until they can build up some comb and honey? Will a two-pound package build itself up into a strong colony by next fall? When would be the best time to have them delivered in eastern New York State? NEW YORK.

Answer—A two-pound package, when put into a hive with frames of foundation, should be fed if there are no flowers. In fact, it is best to feed them a little anyhow, as they have to build the foundation into comb and must rear brood also.

A two-pound package usually builds itself into a strong colony and makes some surplus honey by fall, if it is purchased early enough, say so as to have them delivered by the beginning of fruit bloom.

We would advise you to get some textbook on beekeeping and read it so as to post yourself on the habits and needs of the bees.

TO REQUEEN FROM BEST STOCK

I have seven colonies of bees. I have a better queen in one of these colonies than in the rest. I want to requeen six of these colonies from the queen in the other one. Please give me best methods for doing this. I wish to do this requeening in May. WEST VIRGINIA.

Answer—You can breed queens from the one you selected, but you cannot expect the other colonies to make much honey, as they will be queenless at the time when breeding is at its best.

Remove the queen in one of your hives and exchange the brood of that hive for some of the brood of your best queen. The bees will then rear queen-cells. If you have prepared for this by giving the good queen some comb foundation cut into strips, eight

or ten days ahead of this, it will give those bees a better chance to rear queen-cells. They should rear ten or more.

On the ninth day after making this exchange, open the queenless hive and count the queen-cells that have been built. You can then make as many colonies queenless as you have queen-cells to spare, counting on leaving one in the queenless hive.

Then, on the next day, the tenth day from making the first bees queenless, cut out one queen-cell for each queenless hive and put the queen-cells thus obtained in the middle of a comb of brood in each hive, taking care not to injure the cell in making the transfer. This will produce a queen in each hive. It is usually well to watch those hives for a week or more to make sure that the queens have emerged and have mated and are laying. If any of them have failed, the operation must be recommenced in such hives by giving them brood again from the best queen.

Care must be taken, when giving brood in that way, to have some young brood less than three days old.

There are other ways to rear queens, but this will probably be sufficient for your requirements.

REQUEENING BLACK BEES

I have a stand of the black bees that I want to requeen before they swarm this spring. Can this be successfully done? If so, just how early can I do this? Just what kind of Italian queen should I use with them, mated or not? This hive is two years old this spring.

Or should I wait until late in the fall? I want to do the requeening more for an experiment than anything else. However, I do not want to lose the hive entirely.

KENTUCKY.

Answer—Your best plan is to order an Italian queen from some southern breeder. She will be mated, of course.

You can do this at any time after fruit bloom begins. During fruit bloom is a good time.

When you get the queen, open the hive and find the old queen and kill her. Then insert the new queen, in the cage in which you received her, and keep her there, in the center of the hive, close to the brood, for two days. Then release her by removing the stopper of the cage and putting in its place a little bit of comb honey cappings, which the bees will remove to liberate her. Leave the hive alone for a couple of days. Then examine it and you will probably find the queen laying.

If the queen that you buy is accompanied with instructions on introducing her, it will be all right to follow those instructions.

AGAIN—REQUEENING BLACK BEES

Would you please give me some information on how to replace queenbees?

I have several hives of black bees in old boxes. I would like to put them into new ten-frame hives with new Italian queens. What would be the best way to change bees and queens?

WISCONSIN.

Answer—The proper time to transfer bees from box-hives to movable-frame hives is during fruit bloom. At that time it would do also to give them a new queen. But if you have only black bees it is out of the question to rear such queens yourself. It would be best to buy Italian queens from some southern breeder and introduce them at that time, by killing the black queens just as you make the transfer. If this is too expensive, then buy only as many Italian queens as you can afford and keep the others until you have been able to rear

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If you wish to practice queen-rearing, it will not be a bad plan to buy a book on queen-rearing and read it.

Do not destroy any of your queens until you have queens on hand to replace them.

SURPLUS FROM PACKAGE BEES

Could a three-pound package of bees hived on full sheets of foundation be built up to give a surplus by June 15, clover bloom, if I got them here the last part of April. If so, will you outline the management I should use? MICHIGAN.

Answer—The time you mention is rather short for a package of bees to get to full strength. It is only thirty-five days. The queen will need to be very prolific, since bees hatch in twenty-one days from the egg and require about two weeks after that before they begin to work in the field. But if the clover crop you mention does not begin until June 15, then the colony may harvest quite a crop in the flow of white clover, which may last for a month or more.

The only advice I can give you is to feed them sufficiently so that they may not lack food to rear brood. Of course, they will need pollen, and the flowers must yield that. The kind of season will have considerable influence upon the result, as is always the case in keeping bees.

I must say, however, that many reports come to us of a good crop of honey from packages of two and three pounds bought from the South at the proper time.

MOVING FROM ONE STATE TO ANOTHER

Where hives of bees are moved from Missouri into Illinois, does the law require the original owner to furnish a certificate of inspection?

Will you please reply by return mail? Stamped envelope enclosed. ILLINOIS.

Answer—The Illinois state law reads: "No person shall transport colonies of bees or used bee equipment into this state from a state or country having an inspector of apiaries or other officer charged with similar duties, without a certificate stating that the officer has, within sixty days before date of shipment, inspected the colony or equipment and found it to be free from foulbrood."

You might risk to use just a plain certificate from the owner of the bees. But if there appeared to be any foulbrood after delivery, it would go hard with the man shipping such bees.

I would advise an examination by the Missouri inspector.

USING COMBS FROM WINTER-KILLED HIVES

I have three hives of bees which are winter killed, and as I am a beginner at the bee business I wish to know if these frames could be given to another hive to be cleaned, or to a new swarm. Some of the frames have moulded places of a diameter of about four inches where the cluster had been and they were hanging to sides of frame and started to decay. We brushed these off as well as possible. Then there are a great many bees sticking inside the cells (in this diameter). INDIANA.

Answer—Combs in which bees have died will be repaired by strong colonies if they are placed inside of them, one at a time.

It is a good plan to brush off as much as possible the dead bees that are within the cells. It may be done, although it will damage the combs to some extent. Mouldy combs are soon brought back to good shape by the bees of a strong colony.

You might find it profitable to buy a couple of pounds of bees, to be delivered in

May, for each of those empty hives. The breeders of the South are quite desirous to ship bees to the North for this purpose, and it appears to be profitable on both sides.

QUEENLESS PACKAGE BEES FOR STRENGTHENING

I am going to order some two-pound packages of queenless bees to unite with weak colonies which have good Italian queens. what is the best and safest way to unite queenless package bees with weak colonies? WEST VIRGINIA.

When the packages arrive, I would feed the weak colonies and cage their queens temporarily. Then I would remove from their hives enough combs to give room for the package of bees, then open the package and put it in the place of the removed combs. The next day I would remove the empty package, release the queen, and put back the combs taken out the previous day. Feed the package bees also before uniting them.

If there is not enough room in the hive body to place the package of bees, it may be put in the upper story.

Be sure and do the work so as to avoid any robbing. That is quite important.

BUYING PACKAGE BEES

I would like your advice as to buying package bees.

1. I have ten supers of drawn combs which contain no honey. Would it pay to buy packages for each set of combs?
2. At the present time I have forty colonies of bees and I expect that some of them will be weak this spring. Would these weak colonies be all right to help build up the packages?
3. If package bees are hived on full drawn combs, are they able to build up so as to produce comb honey? I am located forty miles from Lake Michigan and six miles from Indiana.
4. It seems to me that I ought to get the packages on or before April 15. What do you think? I have kept bees since I have been old enough to lift a frame, but have never had experience with package bees and am rather "leery" of them.
5. Ordinarily, how much sugar syrup do package bees require before they can find nectar in the spring? MICHIGAN.

Answer—1. Yes, it will pay to buy package bees to put on empty combs, but you will probably have to feed them some.

2. I would rather help build the weak colonies, if they have queens, with package bees, rather than help the package bees with those weak colonies.

3. From the reports from northern beekeepers, it would appear that package bees received early enough make strong colonies for the summer and harvest considerable honey. See our first article in the March number of the American Bee Journal.

4. Get the packages in time for the fruit bloom. It is best to get them early, but you may have to feed them a little longer than if you get them later.

5. It is impossible to estimate how much feed will be needed, because the answer depends upon how early they arrive and how favorable the spring is.

Meetings and Events

(Continued from page 169)

troubles. Intelligent cross planting to furnish fruiting pollen for sterile trees was emphasized and the need of a package with enough feed present to run the bees for several days after their arrival in case of bad weather.

Prof. W. H. Gates, in his lecture on the "Genetics of the Honeybee,"

(Continued on page 198)

May and June --- Bees and Queens

We offer you — the finest, light-colored, three-banded and golden bees in the South.

Very gentle, Easy to handle Great Honey Gatherers

You can't afford to miss this opportunity

2-lb. package with queen, $2.75. 3-lb. package with queen, $3.75

Queens $1.00 each or $9.00 a dozen.

Capital paid $100,000. 1400 stands of bees in five counties 40 years' experience in breeding good bees.

The Robinson Apiaries, Bartlett, Texas

These bees were developed during the most drouthy weather and those which made good were kept for developmnt.

ROOT SERVICE

FROM

CHICAGO

Beekeepers -- You May Profit

THROUGH USING EFFICIENT EQUIPMENT

Costs are reduced with increased production. Get the full crop by using **Root Quality** supplies.

Let us quote you on your needs.

Write now for our 1930 catalog

A. I. ROOT CO., OF CHICAGO

224 W. Huron Street, CHICAGO, ILL.

Time and a Honey Flow Wait for No Bee

Packages that arrive too late or for any reason fail to build up to full strength before the honeyflow are a very poor investment. Be ready to harvest a bumper crop this season. Let us ship you the best packages that you have ever used, in time to be of the most service to you. Two-pound package with queen, $4.00; three-pound package with queen, $5.00. Untested queens $1.00 each. Write for description and complete price list, also prices on quantities.

Safe arrival and satisfaction guaranteed. Health certificate with each shipment.

J. M. Cutts & Sons

Route 1, Montgomery, Ala.

BEFORE YOU BUY

any bee supplies, send for our 1930 catalog. Our new lower prices will save you money. Send for your copy today.

CHARLES MONDENG COMPANY

159 Cedar Lake Road **Minneapolis, Minnesota**

PACKAGE BEES

APRIL AND MAY DELIVERY

Two-pound package Italian bees with queen, 1 or 100.....$2.50 each
Three-pound package Italian bees with queen, 1 to 100..... 3.25 each
Add 25 cents more for nuclei

Hybrid packages all taken, no more to offer.

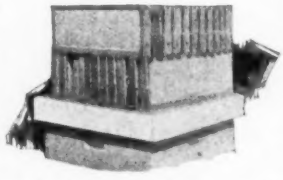
We ship one-fourth overweight packages, young bees, in light, roomy cages, on sugar syrup. Health certificate furnished. Never had disease. Safe arrival guaranteed. Ten per cent to book your order, balance before shipment. Sixteen years' experience shipping package bees. We know how.

COTTON BELT APIARIES, Paris, Texas, R. R. No. 2

Time and Money Mean a Lot

To Beekeepers in Minnesota and Surrounding States

In the rush of the season you can get all your supplies close to home. We have Lewis and Dadant goods on hand at all times and at prices no higher than you would pay at the factory. Whether you come over in your car or mail in your order, you save both *time* and *money*. And this means a lot.



Lewis and Dadant Bee Supplies are known throughout the land. We have everything you need to help you make the most from your bees this year—every year.

Dadant's Wired Foundation and
Lewis Slotted Bottombar Frames on hand at all times.

We like rush orders as we buy in car lots and ship same day order is received.

The Standard Lumber Co.

Winona, Minn. Graceville, Minn.

Brainerd, Minn.

York's Italian Bees and Queens . . . . Are in Demand . . . .

Bees are no experiment or sideline with us, but is our main business and have been for many years. We spare neither labor or expense to meet the increasing demand and are always prepared to give real values and service. We employ only competent help and orders entrusted to us are handled to the satisfaction of our customers. Our apiaries and equipment are strictly modern in every respect and compare favorably in size with any in the southern states. Our methods enable us to produce the best bees and queens possible regardless of cost to us without additional charge to our customers. Cell-building colonies are kept extra strong and fed when no honey is coming in to insure well-fed cells and vigorous uniform size queens that are so popular with the honey-producing public of today. Yes, we could rear queens in large numbers without this extra precaution, but we are in the business to stay and prefer to protect our customers. Hence our success is yours.

2-lb. package Italian bees with queen, $3.00 each; ten, $2.75 each
3-lb. package Italian bees with queen, $4.00 each; ten, $3.75 each

Untested Italian queens, $1.00 each, $10.00 per dozen or $75.00 per hundred
Safe arrival, freedom from disease and satisfaction guaranteed on every package and queen shipped. The season just approaching promises to be even greater than the past one. Let's make it so; we will do our part.

Capacity 5000 Queens Per Month

ONE GRADE ONLY — THE BEST

LEWIS BEEWARE AND DADANT'S FOUNDATION

York Bee Company -:- Jesup, Georgia

(Reference: Anyone we have sold bees to)

Mention the American Bee Journal When Writing Advertisers

Mack's QUEENS
[3-BAND ITALIANS]

Are the most scientifically reared queens to be found in America. Cells are grafted and given directly to queenright colonies to start and finish. We use no swarm boxes or queenless or broodless colonies to start our cells. It took the bees 14 YEARS to tell us how to do it. The dumbest of dumb ought to learn something in that time, eh? But look at these prices:

Untested Queens, 75c each;
$8.00 a dozen; $60.00 a 100

Guaranteed to please you in every way. Shipments start in May. We satisfy others and we can satisfy you. Let us book your requirements now.

HERMAN McCONNELL

(The Bee and Honey Man)

Robinson Route 2 Illinois

GOLDEN BEES AND QUEENS

Ready for shipment about April 1

Beautiful, gentle and good honey gatherers.

Delivered Prices on Package Bees via Parcel Post or Prepaid Express

2-lb. package, including young laying queen $4.00
3-lb. package, including young laying queen 5.00

Ten packages, either size, 25c less each. write for large quantity prices.

QUEENS

Select (one grade only), one, $1.00; ten, $9.00; twenty-five or more, 80 cents each. Tested, last fall rearing, $1.50 each.

We have special made, safe introducing queen cage in which safe introduction is guaranteed, even to a laying worker colony. The price is 50 cents additional per queen when sent in these cages.

No disease. Health certificate.

THE GOLDEN APIARIES
Letohatchie, Alabama
John T. Knight, Mgr.

New HOTEL PÈRE MARQUETTE
400 Rooms 400 Baths
1 person, $3 to $5—2 persons, $5 to $8
Large sample rooms, $4.50 to $7.00
H. Edgar Gregory, Mgr.
Peoria Illinois

PACKAGE BEES
ITALIAN QUEENS

Write for Price List

W. A. WHITMIRE, Milton, Fla.

Sunny Land Italian Bees and Queens
Spring Delivery

The shipping season is near. We want our customers to know that we are better equipped than ever before to take care of their needs. We offer bees and queens for less than any price quoted in former advertisements.

Two-pound combless packages or two-frame nuclei with untested Italian queens, $2.80 each, lots of ten or less. Three-pound package or three-frame nuclei with queen, $1.00 more each. Queens 65 cents each. Discount on quantity orders.

Write us before placing orders. We can save you money. We are prepared to give Quality and Service.

CRENSHAW COUNTY APIARIES
RUTLEDGE, ALABAMA

For Over 50 Years

Beekeepers in many lands have been pleased with this most important tool in Beekeeping. Your Bingham Smoker is offered for sale by numerous dealers.

Insist on the Best

A. G. WOODMAN CO.
Grand Rapids, Mich.

PACKAGE BEES

Special Trial Offer
For April Delivery

5 2-lb. packages with queens, $12.25
5 3-lb. packages with queens, $16.25

KOEHNEN APIARIES
GLENN, CALIFORNIA

PURE ITALIAN BEES

Package Bees
and Queens

Write for Prices

J. ALLEN, Catherine, Alabama

YANCEY HUSTLERS In Packages

BEAUTIFUL THREE-BAND ITALIANS
RECORD HONEY MAKERS

Satisfied customers in every honey-producing section, from northern Ontario to southern Mexico.

Many of our customers write us that our packages produce more surplus honey than their wintered-over colonies. Here is the reason: Every package 25 per cent overweight; bees caged direct from the brood nest of colonies worked every two weeks, thus insuring you the greatest possible number of young bees; all drones screened out; last, but not least, vigorous young Hustler queens that fill the hives boiling over with workers in time for the harvest.

These big overweight packages of "Hustlers" cost you no more than ordinary packages. They are sold under guarantee to reach you in the best of condition and to please you in every respect. Shipping loss last year less than one-tenth of one per cent.

Two-pound package with select untested queen: One to twenty-four, $3.00 each; twenty-five to forty-nine, $2.90 each; fifty or more, $2.75 each

Three-pound packages $1.00 each more than above

Every order has Yancey Brothers' personal attention from the time it is received until the bees leave Bay City. Nothing is left to careless or incompetent help. Remember, we guarantee to please you. Health certificate with every shipment.

CANEY VALLEY APIARIES, BAY CITY, TEXAS
YANCEY BROTHERS, Owners

WILLIAMS' BEES produce a profit where many others fail. We will be glad to have you compare them with any other bees.

They are bred for honey gathering, disease resistance and gentleness.

Two-pound packages with select Italian queen $3.50; ten or more, $3.25; three-pound packages $1.00 per package higher.

P. M. WILLIAMS, Mount Willing, Alabama

Achord Bees and Queens
1912 - 1930

A fine strain of three-banded Italians bred for gentleness and honey-producing ability.

Two-pound packages with select young laying queens in light, strong, convenient cages, $3.50 each; six to fourteen, $3.25 each; fifteen to five hundred, $3.00 each.

Three-pound packages $1.00 each more
Express or mail shipment, f. o. b. here

Select young laying queens, $1.00 each; six to fourteen, 90c each; fifteen to five hundred, 85c each. Tested queens, $1.25 each.

Special Orchard Packages

We are prepared to make prompt shipment of packages of this type. The shipping boxes serve as hives while the bees are in the orchards. Full information on request.

W. D. Achord, Fitzpatrick, Ala.

WANTED

Every beekeeper in the U. S. to send for our price list of package bees and queens. Now is the time to plan for that bumper honey crop and to place your orders for packages to insure early delivery. Our prices: 2-lb. package, 1 to 10, $2.90; 11 to 25, $2.85; 26 to 50, $2.80; 51 to 100, $2.75; 3-lb. package $1.00 more each. Gold Star Queens, $1.00 each, $10.00 per dozen, $75.00 per 100. Absolute satisfaction in every particular guaranteed.

GEORGE A. HUMMER AND SON
PRAIRIE POINT, MISS.

"It's Better Packed in Tin"

CONTINENTAL HONEY CANS AND PAILS

SAMPLES, PRICES—FULL INFORMATION AVAILABLE THROUGH THESE DISTRIBUTORS

The Brock Store, Decatur, Ind.
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The A. L. Boyden Company, Los Angeles, Cal.
The Schultz Honey Co., Bipon, Wis.
The A. L. Boyden Company of Seattle, Seattle, Washington
Superior Honey Co., Los Angeles, Calif.
Dadant & Sons, Hamilton, Ill.
North Dakota Bee Supply Co., Moorhead, Minn.
J. W. Reid, Uvalde, Tex.
Colorado Honey Producers Ass'n, Denver, Colorado
M. H. Hunt & Son, Lansing, Michigan
A. I. Root Company, St. Paul, Minn.
Chicago, Ill.
Syracuse, N. Y.
Standard Lumber Co., Winona, Minn.
Magill & Co., Fargo, N. Dak.
Sioux Honey Ass'n, Sioux City, Ia.
The A. I. Root Company of Texas, San Antonio, Texas
The A. I. Root Company of Iowa, Council Bluffs, Iowa
The A. I. Root Company, Medina, Ohio
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4622 West North Avenue, Chicago, Ill.

WHEELING ST. LOUIS JERSEY CITY CINCINNATI LOS ANGELES

Crop and Market Report

Compiled by M. G. Dadant

For our April crop and market page, we asked our reporters to answer the following questions:

1. How much of the crop left on hand?
2. Will it be sold before new crop comes?
3. Honey plant conditions?
4. How are bees coming through?

CROP ON HAND

Conditions seem to have improved considerably over a month ago as to the amount of honey left on hand. The New England States report only a small quantity, with no doubt but that it will be cleared up before the new crop comes. The same is true of New York and New Jersey. Pennsylvania reports about 40 per cent of the crop on hand, but most of this possibly will move before the new crop is available.

We were pleased to note that in the Southeast the old crop is clearing up very nicely. In fact there will be very little honey left except in the state of Florida, where some of the large producers are still reporting a considerable quantity on hand, with not much chance of it all moving at their prices before the new crop is available.

Conditions earlier in Texas would have indicated a considerable holdover, but practically all of the honey is now sold and reporters are advising that honey is coming in from the Intermountain States and from western Iowa. In New Mexico and Arizona similar conditions exist of most of the honey being sold.

Ohio and Louisiana seem to be similarly well rid of the larger stocks of their honey. It is in the Central West, however, that the most honey is reported on hand. Some Michigan reporters state that there is 40 per cent still on hand, and in Wisconsin 15 to 20 per cent. Similar conditions exist in Illinois and in parts of Iowa. South Dakota likewise reports a considerable quantity of honey still holding. Most of this honey is in the shape of distressed lots in the hands of the larger producers throughout the states above mentioned. There is sufficient of this, however, to cause some concern, although likely the honey would move readily if the sellers were willing to take a lower price, which would be considerably lower than the market price during the earlier part of the fall of 1929.

Colorado and Utah are two other states which are reporting considerable quantities of honey on hand, Colorado reporting as high as 25 per cent in some instances and Utah up to 40 per cent. Washington and Oregon are holding considerable honey yet.

The lots reported above are outside of the cooperatives, on whom no data is available.

All in all, however, the conditions have improved considerably over our report of a month ago and it is apparent that there will be no very great quantities of honey left on hand for the new season, although considerably more than there was a year ago.

WILL ALL HONEY SELL?

As we have reported above, in most states all of the honey will be sold by the time the new crop is available, except in some of the central western states and in a few of the plains and intermountains. In most all localities, reporters are stating that they have just about enough honey on hand to carry them into the new crop season; the demand has picked up considerably over a month ago.

By this we do not mean to intimate that the demand for honey is sharp. On the contrary there is a lagging tendency and some misgiving on the part of people who have honey to sell that the conditions do not look just bright. This is caused largely by the fact that Germany has almost stopped as an importer or is offering only such prices as the American producer would not care to sell for. The solution, of course, lies in the development of the home market to the extent where the German market is not needed.

HONEY PLANT CONDITIONS

We do not believe we have seen for several years a more general enthusiastic attitude over honey plant conditions than there is this year. Some parts of New York report not enough rain, and in southern Michigan and a few isolated points complaint of too much dry weather last fall and an open winter with too little snow.

In most instances, however, clovers went into the winter in nice shape and are coming out apparently very good for the spring season. It would indicate a very fair and above ordinary prospects for clover honey.

In the southeastern states conditions are very satisfactory as to honey plants.

In Texas and the Southeast the weather has been much too backward and the plants have not come forward as they should, nor have the rains been sufficient in most instances. This, however, has partly been alleviated by the recent rains, and conditions are approaching normal there.

It is, of course, too early to make any predictions in the plains states and in the Rocky Mountain territory because of the fact that winter is still on there. However, conditions would seem about normal, because the snows have been fairly heavy and sufficient for irrigation purposes.

Northern California and the states to the north seem to have had sufficient rainfall to assure plant conditions as satisfactory. In southern California, although there has been more rain than last year, it appears that the honey producers were going to suffer again from too dry weather. As we write this, however, on March 18, we have reports that copious rains have fallen which have almost made up for the shortage so far and the prospects are looking far better.

CONDITION OF BEES

There will be far less loss of bees than there was a year ago. In fact we learn of very little losses, comparatively, except in outdoor-wintered bees in some sections of the intermountain territory where no protection was given. There the losses have been heavy. Heavy losses are also reported from Kentucky. In most instances the loss has run between 1 and 5 per cent, with a few cases reporting as high as 10 per cent outside of those mentioned above.

As would be expected after a very severe winter, outdoor-wintered bees have used up considerable stores and undoubtedly a lot of feeding is going to be necessary to carry the bees over until the first spring flows. Bees, however, are emerging in unusually good condition, probably due to the warmer spell during February, which allowed flights as far north as Canada and has stimulated the early brood rearing. All in all, we believe that conditions are far better than they were a year ago as to the strength of the colonies of bees and the amount of losses during winter, with a warning to those wintering bees out of doors to watch for shortage of stores.

SUMMARY

All in all, condition of honey plants and condition of bees would point to normal or above.

The prospects for a honey crop, therefore, are satisfactory and would point perhaps to a better crop than in 1929. As to the marketing conditions, these are not, we believe, nearly as good as a year ago, and it is going to mean that individual beekeepers and beekeepers' organizations are going to have to make more effort than ever to create markets in this country for their products or else be satisfied with a lower price.

We Are Cash Buyers of Honey and Beeswax
Submit samples, and best prices, freight prepaid
Cincinnati We also furnish cans and cases.
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Ads as small as ten words, costing only 70c, are accepted here, but our regular advertisers have demonstrated that it pays to tell more. Use enough words to thoroughly describe your offering and you'll sell quicker. Address all orders or inquiries to the Classified Advertising Department of the American Bee Journal, Hamilton, Illinois.

Will sell your Honey, Flowers, Poultry, Fruit, Pets (as rabbits, etc.) and more . . . . Is your ad here?

As a measure of precaution to our readers, we require references of all new advertisers. To save time, please send the name of your bank and other references with your copy.

Advertisers offering used equipment or bees on combs must guarantee them free from disease, or state exact condition, or furnish certificate of inspection from authorized inspector. Conditions should be stated to insure that buyer is fully informed.

Copy for this department must reach us not later than the fifteenth of each month preceding date of issue. If intended for classified department, it should be so stated when advertisement is sent.

BEES AND QUEENS

CAUCASIAN QUEENS for 1930 from imported mothers. One, $1.50; six, $7.50; twelve, $14.00. Eighty-five per cent pure mated. Safe arrival and satisfaction guaranteed in U. S. A. and Canada. Tillery Bros., R. 6, Greenville, Ala.

YOUNG Italian queens and baby bees for your 1930 requirements. The price is right and it costs you nothing to book your order. One two-pound package with queen, $3.25; ten, $3.00 each; twenty-five, $2.85 each; one hundred, $2.75 each. Three-pound packages, $1.00 each more. Good, heavy packages, shipped when you want them. No disease. Safe arrival guaranteed. The Stover Apiaries, Tibbee Station, Miss.

MY CHOICE queens by return mail. Three-banded Italian queens, each, $1.00; six, $5.00. Tested, $1.50 each. Jul. Buegeler, Alice, Texas.

ITALIAN bees and queens. Booking orders now. Two-pound packages, $3.00; selected queens, 75c each, any number. G. H. Merrill, Greenville, S. C.

PACKAGE bees and queens. We have over 4,000 colonies of bees in two localities, which assures you dependable service. Twenty years' experience rearing queens, and are reared where there is an abundance of pollen. Two-pound packages with queens: 10, $2.60; 25, $2.55; 50, $2.50; 100, $2.45 each. Three-pound packages with queens: 10, $3.45; 25, $3.40; 50, $3.35; 100, $3.25 each. Highest quality young select three-banded, untested Italian queens, 75c each, any number. Delivery and quality guaranteed. Shipping points, Chico and Tracy. Koehnen Apiaries, Glenn, Calif.

NONE BETTER than our seasonably reared Italian queens; $60.00 per hundred. Write for circular. Stearns Bee Company, Brady, Texas.

WE appreciate your past business and solicit your queen and package business for this season. Prices on application. Louisiana Southern Bee Farm, R. 2, Baton Rouge, La.

GOLDEN Italian queens for 1930. The big, bright, hustling kind (the kind that get the honey). Satisfied customers everywhere. Untested, $1.00 each; six, $5.00; twelve, $9.00; $65.00 per hundred. Tested, $1.50 each. Two-frame nuclei or two-pound packages, $3.25 each; ten or more, $3.00 each. Safe arrival guaranteed. Health certificate furnished. E. F. Day, Honoraville, Ala.

GOLDEN Italian queens producing golden bees; very gentle and good honey gatherers. State inspected. Satisfaction guaranteed. Tested, $1.50; select tested, $2.50; untested, $1.00; six for $5.40; twelve or more, 80c each. D. T. Gaster, R. 2, Randleman, N. C.

PACKAGE BEES—Two pounds full weight Italian bees with select untested queen for $2.30, and three-pound package same for $3.10, in hundred lots. Let us send our circular. Stearns Bee Co., Brady, Texas.

BUY your queens from Allen Latham, Norwichtown, Conn.

DIEMER QUEENS—Before June 1, $1.25 each; after May 31, $1.00. Write for price on quantities. J. F. Diemer, Liberty, Missouri.

PACKAGE BEES—Three-banded Italian. If you want bees that are gentle to handle, our bees will please you. Young queens and baby bees; half pound overweight in every package. Bees shipped in light, roomy cages. Syrup feeder in cage. Queen shipped inside of package bees in cage with queen on candy feed. Two-pound package with queen: 1 to 9, $3.00 each; 10 to 100, $2.75 each. Three-pound package with queen: 1 to 9, $3.75 each; 10 to 100, $3.50 each. State inspection certificate attached. Prompt delivery; satisfaction guaranteed. Little River Apiaries, Box 83, Gause, Texas.

MY BEES realized last year more than ten gallons of honey per colony, and I left on a whole super of stores for winter. I find it difficult to dispose of honey, and offer bees. Italians in packages with two frames (Hoffman) and two pounds of bees, $4.00. A better package is the two frames with three pounds of bees for $5.00. Each package contains a tested queen. Satisfaction guaranteed. Father Besselaar, Bordelonville, La.

GOLDEN Italian queens for sale. The same strain that has given satisfaction for over thirty years. One, $1.00; six, $5.00; one dozen, $9.00. Health certificate with each queen. Satisfaction guaranteed in United States and Canada. E. A. Simmons Apiaries, Greenville, Ala.

BRIGHT Italian queens, ones that are guaranteed to please you or your money refunded. Untested, any number, 75c each; tested, $1.00 each. Two-frame nuclei or two-pound packages, $3.25 each; ten or more, $3.00 each. Honoraville Bee Company, Honoraville, Ala.

THREE-BANDED Italian bees and queens. Two-pound package with young queen, $3.00; ten or more, $2.75 each. Three-pound package with queen, $3.75; ten or more, $3.50 each. Health certificate with shipment. Safe arrival guaranteed. William Piefer, Gause, Texas.

SPECIALIZE queens bred for honey; one grade—the beautiful Italian golden, young and laying queens. One, $1.00; 6 to 12, 90c each; 14 to 20, 80c; 22 and up, 75c. Safe delivery guaranteed. Victor Prevot, Beekeeper, Mansura, La.

THREE-BANDED Italian queens. Delivery commencing April 26. One, $1.00; 12, $10.00. Certificate with each shipment. G. K. Cannon, Pleasanton, Texas.

CHOICE, bright Italian queens that are a pleasure to work with and you will be proud to own. Requeen with stock that has been bred and selected in the North the past twenty-seven years for good wintering; husters, gentle, and fine color. One queen, $1.00; dozen, $10.00. Breeders, $10. Emil W. Gutekunst, Colden, N. Y.

SMITH'S superior package bees and queens. The kind that please the most particular. Everything guaranteed. Write for prices and folder. N. B. Smith & Co., Calhoun, Ala.

GOLDEN Italian queens. Untested, $1.00 each, any number. Untested won't be ready until June 1. Tested of last year's rearing, ready now. Tested queens, $2.00 each, any number. I will guarantee my queens in every respect. J. B. Brockwell, Barnetts, Va.

GOLDEN Italian queens. Producing large, beautiful bees, solid yellow to tip. Untested, $1.25; selected tested, $3.00 each. Two-pound package Italian bees, $3.00. Deduct 5 per cent discount for quantity orders. Dr. White Bee Company, Sandia, Texas.

TWO-POUND package of bees with young queen, $2.40 each; three-pound package, $3.25, in quantities. See my large ad on page 199. H. E. Graham, Box 735, Cameron, Texas.

PACKAGE BEES—Hardy northern strain. Van's Honey Farms, Hebron, Ind.

GOLDEN Italian and Carniolan queens. Tested, $1.00; untested, 65c. Safe arrival guaranteed. Write for prices on package bees and nuclei. C. B. Bankston, Box 65, Buffalo, Texas.

WARD'S Italian queens and package bees. Queens for May, $1.00. Two-pound package and queen, $3.25; three-pound package and queen, $4.25. Postpaid to third zone. C. W. Ward, R. 1, LeRoy, Kans.

A SPECIAL orchard pollinating package for orchardists, beginners, and heavy producers. Two pounds of Italian bees on two good standard Hoffman frames brood, bees and honey. An Italian queen, spring raised and introduced and laying as she comes to you; hole bored and corked in package, ready to set in orchard or hive stand and let go to work. Twenty years' experience as shipper and buyer of packages convinces me this is the best buy on the market today. Price, $5.50 single package. Terms, one-fifth down for April and May delivery, f. o. b. Kenner. Prices on combless packages on request. No disease; health certificate attached. All shipments in regular approved standard packages. Six main line railroads to ship over. All queens raised by me in person; all packages put up by me personally. Have moved my apiaries back to the location Louisiana reconstruction apiaries, in the best beekeeping territory in South. Reference, any bee publication in U. S. Look me up when in New Orleans personally. Queens in season, $1.00 each. Send for literature. No Canadian business solicited. Jes Dalton, Kenner, La. (In suburbs of New Orleans.) Eat your honey with Kellogg's cereals.

CAUCASIANS—Bred this year from daughters of imported mothers; also improved strain bred years for great tongue length, honey carrying capacity. Gentle, prolific, minimum swarming, northern bred. There is a difference. No complaints last year. Send for literature. Bird's Apiaries, Odebolt, Iowa.

PURE Italian queens and bees. As good as the best. There is absolutely no disease risk here. Write for circular. Roy S. Weaver & Bro., Courtney, Texas.

ITALIAN bees and queens. Quality unexcelled. Also, I want you to have every ounce of good, live bees at your end of the line your order calls for. Also, unless weather conditions make it impossible, bees leave here on date specified. O. P. Hendrix, West Point, Miss.

GOLDEN Italian queens, producing large, hustling bees, very gentle and beautiful. A proven honey-producing strain. Write for prices and circular. W. C. Wright, Holt, Missouri.

THREE-BANDED Italian bees and queens, ready June 1. Two pounds with queen, $4.00; three-frame nuclei with queen, $5.00; full ten-frame colonies, $15.00. Select untested queens, $1.00 each; dozen lots, 75c each; $60.00 per hundred. No disease, safe arrival and satisfaction guaranteed. My twentieth year. A. E. Crandall, Berlin, Conn.

EARLY PACKAGE BEES—Prompt shipment, beginning May 1. Two-pound package without queen, $2.50; three-pound, $3.50. Add price of queen if wanted. Choice, hardy Italian queens $1.00; ten for $9.00. Safe arrival guaranteed. Birdie M. Hartle, 924 Pleasant St., Reynoldsville, Pa.

IF you want gentle bees, good honey gatherers and beautiful to look at, my strain of golden Italians will please you. Prices: Untested, $1.00; six, $5.40; twelve to forty-nine, 75c each; fifty or more, 70c each. Tested, $1.50 each. Circular on request. Health certificate, safe arrival and satisfaction. Hazel V. Bonkemeyer, R. 2, Randleman, N. C.

IMPROVE your stock and insure a crop by using our Line Bred Italian Queens, holding Indiana state comb honey production record for ten successive years. A trial will convince. Untested, 1 to 25, $1.25; 25 to 100, $1.15. Select untested, 1 to 50, $1.50; 50 to 100, $1.25. Guaranteed select tested, each, $2.50. "Honeyville Queen Apiaries," Foothill Blvd., Rt. 1, Monrovia, California.

FOR SALE

FOR SALE—Two pounds bees and young Italian queen, $2.50. Health certificate furnished. Satisfaction guaranteed. Write J. L. Leath, Corinth, Miss.

FIFTY colonies bees with new equipment, or will put out on shares and increase. Western baby chicks for sale. Dan J. Nero, Hanks, N. D.

FOR SALE—Highest quality queen mailing cages. Used extensively by the largest queen breeders in the South. Samples and prices on request. Hamilton Bee Supply Co., Almont, Mich.

FOR SALE—80 colonies bees, ten-frame hives. Guaranteed disease free. George Pillman, Centaur Station, Mo.

APIARY for sale. Ten acres. Thirty-eight hives of good, sound bees; equipment for 350 hives. On state road, five minutes' drive from good village. Inquire of Emil Freitag, Middleburg, N. Y.

FOR SALE—Several apiaries fine Italian bees in No. 1 condition. Must sell owing to death of my husband. Some honey also for sale. Write Mrs. H. S. Robinson, Old Albuquerque, New Mexico.

EIGHT outapiaries for sale, about 200 colonies of bees. Certificate furnished in case of sale. George P. Wood, 217 Walnut St., Peekskill, N. Y.

FOR SALE—Entire bee business. Ninety colonies bees, power extractor, supplies; also separate colonies. Two acres land, seven-room house; half mile from depot. Julius Gentz, Wabeno, Wis.

FOR SALE—Seventy colonies Italians. Beautiful location. Ill health compels sale. Address Lock Box 234, Manchester, Iowa.

COMPLETE beekeeping outfit with 18 colonies bees. No disease. Priced right. Henry Hagen, Meppen, Ill.

FOR SALE—In sunny California, 160-acre ranch; 95 colonies of bees; no disease. House and ranch mostly furnished. All for $3500; $1500 cash, balance easy payment. J. B. Hohmann, Stony Ford, Calif.

FOR SALE—120 colonies bees, and equipment for extracted honey. Health certificate furnished. Lewis Francisco, Dancy, Wisconsin.

HIGH GRADE bees, eight- and ten-frame. Very reasonable prices; no disease. If interested, write. G. F. Schilling, State Center, Iowa.

FOR SALE—Fifteen stands of bees and equipment for comb and extracted honey. All in good shape; no disease. Mrs. S. A. Chapman, 421 Calumet Ave., Aurora, Ill.

FOR SALE—100 to 500 colonies in South Carolina on good locations; painted hives, full sheets foundation. Prices reasonable. L. L. Ferebee, Pineland, S. C.

35 HIVES of bees with shallow food chamber; strong hives. Also 70 full-depth supers with combs, Root medium brood foundation and wired. Hives and supers are in first-class condition, ten-frame Root make. Inspector's certificate furnished. Will sell at a bargain. If interested, write M. Noack, 744 S. Crawford, Ave., Chicago, Ill.

FOR SALE—200 colonies finest Italians in northern New York's best clover section. Standard ten-frame Lewis equipment and Dadant's wired foundation, mostly deep extracting supers; 150 comb honey supers, 150 mating boxes, extractor, tanks, etc. Good local market. Guaranteed healthy. Priced to sell. A. J. Wilson, Hammond, N. Y.

HONEY FOR SALE

COMB, extracted and chunk honey in ten sizes glass containers and 2½, 5-, 10- and 60-pound tins. Livest labels in U. S. or plain. One of our special display cases with $25 and $50 orders. Write for free illustrated circular showing our packages and free samples of honey. Griswold Honey Company, Madison, O., U. S. A.

HONEY FOR SALE—Any kind, any quantity. The John G. Paton Company, 230 Park Avenue, New York.

FOR SALE—White clover honey in 60-pound cans. None finer. Satisfaction guaranteed. J. F. Moore, Tiffin, Ohio.

HONEY FOR SALE—All grades, any quantity. H. & S. Honey and Wax Company, Inc., 265 Greenwich St., New York City.

WHITE CLOVER comb honey, packed eight cases to carrier. W. L. Ritter, Genoa, Ill., DeKalb County.

FOR SALE—Water white clover honey in new cans and cases, 8 cents pound. Virgil Weaver, Moville, Iowa.

MICHIGAN white clover honey of fine quality and flavor, in new 60-lb. cans. One case of 50. Sample furnished. Orval W. Dilley, Grand Ledge, Mich.

FOR SALE—Extra choice white clover honey, case or carload; also amber. David Running, Filion, Mich.

HONEY (comb and extracted), pure maple syrup, maple sugar and sorghum molasses. Special price to quantity buyers. C. J. Morrison, 1235 Lincoln Way West, South Bend, Ind.

STURDEVANT'S CLOVER HONEY — St. Paul, Neb. Any quantity.

HONEY FOR EVERY PURPOSE—We have it in any amount; light amber and white clover, basswood, sweet clover, buckwheat. Write us what you need and ask for prices. A. I. Root Company of Chicago, 224-230 West Huron Street, Chicago, Illinois.

SHALLOW frame white comb honey and white extracted honey. The Colorado Honey Producers' Ass'n, Denver, Colo.

FOR SALE—Our own crop white clover and amber fall honey in barrels and cans. State quantity wanted and we will quote prices. Samples on request.
Dadant & Sons, Hamilton, Illinois.

NEW CROP shallow frame comb honey, also section honey; nice white stock, securely packed, available for shipment now. Colorado Honey Prod. Ass'n, Denver, Colo.

HONEY FOR SALE — White and amber honey in 60-lb., 10-lb. and 5-lb. tins. Write for prices.
Dadant & Sons, Hamilton, Illinois.

FOR SALE—Northern white, extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

NEW CROP white clover extracted and chunk comb honey. Write for sample and prices. Kalona Honey Co., Kalona, Iowa.

EXTRA QUALITY clover belt white honey in 2-60 cases. Sample 15c. Carl J. Snover, 120 South Dartmouth St., Kalamazoo, Mich.

CLOVER honey, choice, ripened on bees. Satisfaction guaranteed. Case or quantity. E. J. Stahlman, Grover Hill, Ohio.

CLOVER HONEY that grades white. Fall honey, light amber. New 60-lb. cans. Sample 15c. Cloverdale Honey Co., Rockport, Mo.

FOR SALE—No. 1 dark comb and No. 2 clover, $3.00 per case of 24 sections. Extracted clover, two 60-lb cans to case, 10c pound. Honey in 25-case lots 5 per cent off; 50 or more cases, 10 per cent off. H. G. Quirin, Bellevue, Ohio.

FINEST quality white clover honey in new sixties. State quantity wanted. Martin Carsmoe, Ruthven, Iowa.

CHOICE white clover honey. Any quantity. Sample 10c. Ralph E. Blackman, Portland, Mich.

CHOICE clover extracted, in 60-lb. cans; a carload or less. State amount you will need. D. R. Townsend, Northstar, Mich.

CHOICE clover honey in 5's and 60's. W. H. Mays, Goshen, Ind.

FOR SALE—White clover honey in sixty-pound cans, 8½c per pound. Joseph H. Hoehn, Ottoville, Ohio.

FOR SALE—Amber extracted honey in two-pound jars, twelve to case, nine cases. Excellent quality. Joseph Burk, Norwalk, Iowa.

FOR SALE—By producer, 290 cases thistle extracted honey in 60-lb. new cans. Prices and samples by request. C. I. Graham, Colusa, Calif.

EXTRA LIGHT amber clover granulated, 6½c; choice clover granulated, 7c. Utendorfer's Apiaries, Gaylord, Minn.

FOR SALE—Thirty cases No. 1 white comb honey, $4.00 case. H. M. Schultz, Waterloo, Wis.

FINEST white clover honey, 8c pound. Edward Klein, Gurnee, Ill.

FOR SALE—No. 1 white comb honey. O. S. Biggs, San Jose, Ill.

HONEY AND BEESWAX WANTED

WANTED—Car lots of honey. State quantity, shipping point and price. Mail sample. Hamilton, Wallace & Bryant, Los Angeles, Calif.

WANTED—A car or less quantity of white honey in 60-lb. cans. Mail sample and quote lowest cash price for same. J. S. Bulkley, 816 Hazel St., Birmingham, Mich.

WANTED—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5 cents a pound for wax rendering. Fred W. Muth Company, 204 Walnut St., Cincinnati, Ohio.

Additional Classified Advertisements Continued on Following Page

CLASSIFIED ADVERTISING (Con'd)

SUPPLIES

SAGGED COMBS are result of slackened wires caused by wires cutting soft wood of frames. Use metal eyelets. Per 1,000, 60c. Handy tool for inserting eyelets, 25c. Postage 3c per 1,000. Superior Honey Co., Ogden, Utah.

COMB FOUNDATION—Note these prices on twenty-pound lots: Medium brood, 64c; thin super, 74c. Can furnish the new non-sagging foundation. Wax worked at lowest rates. E. S. Robinson, Mayville, N. Y.

MAKE queen introduction sure. One Safin cage by mail, 25c; five for $1.00 Allen Latham, Norwichtown, Conn.

FOR SALE — We are constantly accumulating bee supplies, slightly shopworn; odd sized, surpluses, etc., which we desire to dispose of and on which we can quote you bargain prices. Write for complete list of our bargain material. We can save you money on items you may desire from it. Dadant & Sons, Hamilton, Illinois.

BEST QUALITY bee supplies, attractive prices, prompt shipment. Illustrated catalog on request. We buy beeswax at all times and remit promptly. The Colorado Honey Producers' Ass'n, Denver, Colo.

HAVE YOU any Bee Journals or bee books published previous to 1900 you wish to dispose of? If so, send us a list.
American Bee Journal, Hamilton, Ill.

THE DADANT SYSTEM IN ITALIAN—The "Dadant System of Beekeeping" is now published in Italian, "Il Systema d'Apicoltura Dadant." Send orders to the American Bee Journal. Price $1.00.

DADANT'S Wired Foundation, medium brood 8 9/16x16¾ in 50-lb. boxes; $34 per box. Longfellow Bros., Hallowell, Me.

HIVE STANDS—While they last, ten for $2.25. Frame nailing device, $1.50 value, 65c. Solar wax extractor, regular $14.00, now $8.00. Doolittle feeders, k. d., 18c. Other bargains. Write for catalog and bargain list. St. Louis Apiary Supply Co., Commercial Bldg., St. Louis, Mo.

FOR SALE—Fifty pounds Dadant's medium wired shallow extracting foundation, $35; also 25 ten-frame shallow extracting supers, new, $23. Will exchange for package bees. B. M. Winans, Oriskany Falls, N. Y.

BEE SUPPLIES—Big discount; freight prepaid. Catalog free. J. W. Rouse, Mexico, Missouri.

WANTED

WANTED—300 colonies priced with 8c honey. Edward Klein, Gurnee, Ill.

WANTED—Experienced helper for coming season. Must have good habits and be physically able and willing to work. Give particulars and references, also wages expected, in first letter. C. S. Engle, 1610 Fourth Ave. South, Fargo, N. D.

WANTED—One experienced man and one helper for my extensive apiaries in Michigan and Alabama. Must be willing workers with good habits. State age, weight, height, experience, if any, and wages expected with board, and give references, all in first letter, or expect no reply. David Running, Sumterville, Ala.

HELP WANTED—Experienced helper wanted for season of 1930. Give wages expected with board. Winkler Honey Co., Joliet, Ill.

WANTED—To exchange honey for 100 two-pound packages. Ralph E. Blackman, Portland, Mich.

MISCELLANEOUS

PLANS for poultry houses; 150 illustrations. You need this book. Write for free offer and sample copy of "Inland Poultry Journal," 51 Cord Bldg., Indianapolis, Ind.

CLEAR LOT, one square of beautiful Brookside Park, in Indianapolis; cheap price of $600, for bees. O. Jessup, Carmel, Ind.

SELL IT—Honey or bees or queens or second-hand equipment or pet stock or poultry, by advertising it in Gleanings in Bee Culture, Medina, Ohio, with its more than 20,000 paid subscribers. Rates: 7c a word classified; $4.20 an inch for display advertising. That great beekeeper, George S. Demuth, is editor, for whose beekeeping teachings 20,000 beekeepers subscribe.

THE BEE WORLD—The leading bee journal in Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy, post free, 12 cents, stamps. The Apis Club, Brockhill, London Road, Camberley, Surrey, England.

SELL OR TRADE FOR BEES—Quarter section unimproved near Towner, N. Dak. Want bees in Minnesota or North Dakota. Willing Bee Co., Parshall, N. Dak.

"HOYT'S" golden pure table cane syrup, made without chemicals; ten gallons, $10. "Hoyt's" select breeder bullfrogs, ready for immediate long distance shipments; $3.00, $5.00 and $7.00 dozen. Prepared "Chick" health rice, $4.00 one hundred pounds. Table rices, $6.00 one hundred pounds. J. P. Hoyt, Box 46, Estherwood, Louisiana.

Meetings and Events

(Continued from page 191)

illustrated some of the points that keen breeders had already begun to question; that the "drone is his mother's boy only" is not only a safe fact to bank on.

Probably by far the most important talk was by Dr. Barnard, President of the American Honey Institute and Chairman of President Hoover's Child Welfare Committee. He talked for over an hour on the need and uses of honey in the diet. He was followed by Mrs. Loggin, of the Kellogg Company, with a lecture and demonstration on the use of honey and everything from drinks to cakes, candies and salads.

Mr. Nolan and Mr. Laidlaw gave demonstrations on hand and mechanical mating of queenbees. Among the other speakers were Morley Pettit, Dr. Ortell, Mr. George Demuth, Kenneth Hawkins, H. C. Dadant, J. J. Wilder, and Guy LeSturgeon. The officers for the coming year are: J. J. Wilder, President; E. G. LeStourgeon, Secretary; W. E. Joor, Vice-President; Jere Frazer, Jes Dalton, Mr. Jensen, J. M. Cutss, and W. J. Barney. The next meeting will be in Montgomery, Alabama, date to be announced later.

Jes Dalton.

Logan County, Ohio, Beekeepers to Meet

Our Association plans to hold a demonstration at the apiary of Albert H. Clagg, on April 12, 1930. Charles Reese and Virgil Argo will be here at this time. They will demonstrate the installation of package bees and spring management of the bees.

A deputy bee inspector will be appointed for Logan County this spring and a drive on American foulbrood will be initiated. We have secured the aid of our county commissioners in this fight.

N. B. Kelley.

Beekeeping in the Philippine Islands

"La Ageja Y Sus Productos" is the title of a 30-page bulletin of the Department of Agriculture at Manila. It is in the Spanish language, but gives a short sketch of progressive beekeeping, with a number of cuts. This work is already over two years old, but we had never heard of it till lately. It is the work of the entomologist Faustino Q. Otanes.

STATEMENT OF OWNERSHIP

Statement of the ownership, management, circulation, etc., required by the Act of Congress of August 24, 1912, of American Bee Journal, published monthly at Hamilton, Illinois, for April 1, 1930:

STATE OF ILLINOIS, } ss.
County of Hancock, }

Before me, a notary public in and for the state and county aforesaid, personally appeared M. G. Dadant, who, having been duly sworn according to law, deposes and says that he is the business manager of the American Bee Journal, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, rendered by the Act of August 24, 1912, embodied in Section 443, Postal Laws and Regulations, printed on the reverse side of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor and business manager are:

Publishers, American Bee Journal, Hamilton, Ill.

Editor, C. P. Dadant, Hamilton, Ill.

Managing editor, G. H. Cale, Hamilton, Ill.

Business manager, M. G. Dadant, Hamilton, Ill.

2. That owners are:
C. P. Dadant, Hamilton, Ill.
H. C. Dadant, Hamilton, Ill.
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C. S. Dadant, Hamilton, Ill.
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Leon Saugier, Hamilton, Ill.
Joseph Saugier, Hamilton, Ill.

That the known bondholders, mortgagees and other security holders owning or holding one per cent or more of the total amount of bonds, mortgages or other securities are: None.

(Signed) M. G. DADANT,
Business Manager American Bee Journal.

Sworn to and subscribed before me this first day of April, 1930.

MINNIE S. KING,
Notary Public.

My commission expires Nov. 19, 1933.

CHINESE
VITEX TREES

Wonderful honey producers. Bloom first year and continue to bloom until well toward frost. Fast growers; hardy.

We have devoted much time and care to our Chinese Vitex and can offer splendid specimens.

Trees less than 1 ft., 50c; 1 to 2 ft., $1; 2 to 3 ft., $2; over 3 ft., $3.

ADAM SCOTT - : - JOPLIN, MO.

Great Interest in Vitex Trees

The article by Adam Scott, Joplin, Missouri, in the March number, page 129, has brought considerable correspondence from readers who would like to try out this tree. It is apparently an abundant nectar producer and bids well to be one of the finest honey plants. It blooms the first year after planting, from early spring to frost in the fall, the nectar seeming to flow as fast as bees gather it, as the bees remain on a single blossom for a long time.

The Chinese vitex tree, described by Mr. Scott, is difficult to start from seed. However, when once started it is a very rugged tree, and a fast grower. It has strong, healthy rooting and will grow to a height of about twenty feet the first seven or eight years. It will stand extreme weather with continued cold for several weeks. Mr. Scott reports that none of his trees in the open without protection were killed this winter, and they have not been injured apparently by extended dry spells.

Those further interested in the tree should write directly to Mr. Scott.

Standardization of Shipping Packages

At the Southern States Conference in Baton Rouge four types of cages were standardized — the two-frame nucleus, or comb cage, 19¾" by 12x4"; the three-frame nucleus, or comb cage, 19¾x15x5½"; the two-pound combless cage, 16x9x4½", and the three-frame combless cage, 16x9x6". It is interesting to note that while opinion and use in the past has favored a two-pound combless cage of 14x9x6", the opinion at present is in favor of 16x9x4½". No standards have been erected for the orchard type of package.

Warren W. Whitcomb, Jr.

General Conditions in the South

After one of the worst winters for continued hard freezing that we have had in twenty years, bees came out apparently in better condition than expected, and plants, after being held dormant for this long period, are in splendid shape. A warm spell in the latter part of February brought hopes high, but March has been bad — cold, rainy, and backward, with nectar going to waste.

Today, March 10, nearly one-third of the month is gone and not a single good flight day. Willows in full bloom and tulips budding fast. Fortunately most colonies went into winter long on stores and are still holding up. These conditions seem to prevail over the South generally.

Jes Dalton.

Modified Dadant Booklet in Demand

A notice in our January number about a new booklet, "The Modified Dadant Hive—More Honey at Less Cost," has brought quite a big demand for it. Apparently there is considerable interest in the large hive. We have more of these booklets and would be glad to send them to any who may be interested.

ORGANIZED IN 1928 AT COLLEGE STATION, TEXAS

TEXAS Bee Dealers Queen Ass'n. BREEDERS

Among other things, this organization requires the following of its members:

1. At least two years' experience in producing queens or shipping package bees.
2. The member must have a definite strain of bees, and this strain must benr a distinctive name.
3. If the member produces more than one variety of bees or queens, they must be produced in separate yards, at sufficient distance apart to prevent crossing.
4. The member must carry a specified amount of advertising.
5. The member must have a yard equipped for the production of not less than fifty queens.
6. The member must present bank and other references as evidence of financial and moral standing.
7. A certificate of inspection must be presented yearly from the office of the state entomologist.
8. The forms for proof of proper equipment and purity of strain, and form for proof of financial responsibility and business relationship, must be filled out and be properly signed and certified to.

The following charter members are guaranteed responsible by the Association, and any correspondence relative to any of them may be addressed to the secretary, H. E. Coffey, Whitsett, Texas:

Caney Valley Apiaries, Bay City, Texas.
I. C. Eppright, Austin, Texas.
T. W. Burleson, Waxahachie, Texas.
E. P. Stiles, Houston, Texas.
G. K. Cannon, Pleasanton, Texas.
W. J. Henderson, Copperas Cove, Texas.
Roy S. Weaver & Bro., Courtney, Texas.
John A. Mercer, Bayside, Texas.
T. P. Robinson, Bartlett, Tex.as.
Valley Bee and Honey Company, Weslaco, Texas.
Joe C. Hailey, Hughes Springs, Texas.
State Apicultural Research Laboratory, Route 1, Box 368, San Antonio, Texas.
Ault Bee and Honey Company, Weslaco, Texas.
R. V. Stearns, Brady, Texas.

BRAZOS VALLEY APIARIES CAMERON, TEXAS **BEES AND QUEENS** **BRAZOS VALLEY APIARIES CAMERON, TEXAS**

A strain of Three-band Italians with an unsurpassed record for honey gathering in all parts of the U. S. and Canada

Package bees, including young laying queens:

	1 to 4	5 to 24	25 to 99	100 or more
2-lb.	$3.00 each	$2.50 each	$2.45 each	$2.40 each
3-lb.	3.75 each	3.35 each	3.30 each	3.20 each

For sixteen years I have shipped bees and queens in large quantities to every section of the U. S. and Canada and have very nearly reached the 100 per cent mark in successful delivery. Old customers took the major part of my entire output in 1928. Health certificate and all necessary invoice papers with all shipments. There has never been a case of foulbrood in this county. All orders filled on date wanted. Absolute full weight with young bees. Drones screened out. Safe delivery guaranteed. In case of loss or damage in transit, I will replace without grumbling. All queens pure Three-banded Italians. Young and purely mated. Queens for packages shipped in queen cages among bees so each can be examined upon arrival.

You can pay more money but you can not get better bees or more honest service

H. E. GRAHAM, Cameron, Texas, P. O. Box 735

LONG'S ITALIAN BEES FOR 1930

We are now booking orders for our Italian Bees and Queens for April and May delivery without deposit

Shipping season starts April, if weather permits, and all bees are shipped with a nice frame of brood and honey for feed in transit; cages filled and shipped same day over main trunk lines, giving quick service to all northern and northeastern states.

No disease has been known in this locality.

I quote price only on three-pound packages, as I believe this to be ideal size for building up in time to gather surplus honey crop. Satisfaction and safe arrival absolutely guaranteed. Prices are as follows:

1 to 9 packages, each	$3.90
10 to 24 packages, each	3.75
25 or more packages, each	3.60

Each package contains a young Italian queen

W. C. LONG, SAVANNAH, GA.
115 EAST LIBERTY STREET

Are You Asking---How Shall I Sell My Honey?

The answer is easy! Beekeepers are fast learning that the best market is the home market. Honey packed in attractive containers sells best.

Build up your local market. Decorate your grocers' shelves with rows of your choice honey neatly marked with your attractive label.

If you do not find a stock label in our catalog which meets your needs, send us your ideas and we will put them in color.

We also furnish stationery, business cards, selling helps, show cards, in fact **all the printing needs of the beekeeper.** Catalogues on request.

AMERICAN BEE JOURNAL, Hamilton, Illinois

SAVE MONEY PRODUCE MORE HONEY

SPECIAL PRICE FOR APRIL ONLY ON DADANT'S WIRED FOUNDATION
Size 8 9/16"—Price per box of 50 pounds, $35.00
Wire your orders for wired foundation to

B. F. SMITH JR. CO., FROMBERG, MONT.
Ask us for our special bargain list

QUEENS *None Better*

From the Very Finest Strain of Beautiful Italians

Package Bees — Nuclei

2-lb. Package, $3.00; 3-lb. Package, $4.00 With Untested Queen — *Golden or Three-Band*

2-frame Nuclei, $3.50; 3-frame Nuclei, $5.00 With Tested Queen

Untested Queen, 70c; Tested Queen, $1.00

We Sell Lewis Bee Supplies, Dadant's Foundation

Write for Quantity Prices

A. M. HUNT & SONS, GOLDTHWAITE, TEXAS

Safe Arrival and Satisfaction Guaranteed

PLAIN FACTS

We haven't much to talk about so far as cheap bees and queens are concerned.

We always receive orders for early bees and queens before we can ship from Medina. To meet this demand we have contracted with reliable southern shippers for high quality bees and queens to be shipped direct to our customers.

After May 10 or thereabouts, depending on the season, we can ship packages from Medina and thus save the northern beekeepers considerable on express charges. Then, too, the bees will naturally arrive at destination fresher than bees shipped a longer distance from some southern state. This is something to think about.

Queen Prices for U. S. A. and Canada Only

Quantity	1 to 24	25 or over
Untested	**$1.25 each**	**$1.00 each**
Tested	**2.25 each**	**2.00 each**

Customers outside U. S. A. and Canada must add 25 cents per queen to above prices to cover extra postage and cost of larger cages.

Bees in Combless Packages by Express (No Queen)

	1 to 24 pkgs	25 or over
2-lb. Package of Bees	**$3.50 each**	**$3.00 each**
3-lb. Package of Bees (best for orchards)	**4.50 each**	**4.00 each**

Add price of queen wanted to price of package

THE A. I. ROOT COMPANY, Medina, Ohio

The best in Bees and Queens

2 lbs. with queen		3 lbs. with queen
$2.90	1	$3.80
2.55	10	3.45
2.45	25	3.35
2.40	50	3.25
2.35	100	3.15

Young laying untested queens $1.00 each; 10 or more, 90c each; 100 at 75c each

Terms: 10 per cent with order; balance before shipment

J.W.DiLullo, Anderson, Cal.

WESTERN CANADA BEEKEEPERS

We manufacture lock-corner hives, slotted bottom-bar frames, all-wire queen excluders (wood or metal frame), radial honey extractors and many other articles that are serving beekeepers in many parts of the world.

Catalog Free

S. P. HODGSON & SONS
New Westminster, British Columbia

ITALIAN QUEENS

Good queens are indispensable to good beekeeping. We offer young Italian queens, the product of years of selective breeding in our own interests as large honey producers. Anything you may expect of fine queens cannot be too much for these truly excellent queens. At our prices you cannot afford to be without them.

Prices the year round: $1.00 for one; two to twenty-four at 75c each; twenty-five or more at 60c each.

DAVIS BROS.
Courtland, Calif. Sacramento Co.

Dadant's Surplus Foundation

A STANDARD OF PERFECTION

This foundation gives each section a delicate center that blends perfectly with every bite. Remember, well pleased customers are the comb honey producer's biggest asset.

Sold by Lewis-Dadant dealers

DADANT & SONS
Hamilton, Illinois

PACKAGE BEES FOR 1930

Here we go advertising again, when in fact our satisfied customers have already contracted for most all the bees and queens that we can ship for the season of 1930.

Nevertheless the bee journals must have ads to keep them going, so we are helping them along by placing this one.

Write us your needs; if we cannot supply you, we can put you in touch with the very best shippers of the South.

T. W. BURLESON & SON
Waxahachie, Texas